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THE PROFESSION'S INDIVIDUAL AND COMMUNITY RESPONSIBILITIES

OLIN WEST, M. D.

Secretary and General Manager, American Medical Association, before the Post-Graduate Conference, Detroit, Michigan, Tuesday evening, June 18, 1929

Mr. President, I am especially grateful for the opportunity that is offered me to meet with this particular group. It has been a privilege to hear the very scholarly paper presented by Dr. Lahey. I take great pride in the fact that Dr. Lahey is actively interested in the administration of the affairs of the American Medical Association. From what I know of him as a surgeon and from what I know of the intense and intelligent interest that he takes in everything that he has anything to do with, I can assure the Detroit Academy of Surgeons that it has really honored itself in taking him into honorary membership in that body.

I have watched with a great deal of interest of a very peculiar kind the efforts that the Michigan State Medical Society has made in co-operation with educational institutions in the state, to develop post-graduate instruction for the benefit of the rank and file of the profession in this state. There are those among the high-brows who object to courses of the kind that have been put on in Michigan, being called "post-graduate courses." I don't care what they call them, but I think it is an evidence of very important progress that the Michigan State Medical Society and the educational institutions of this great state have realized the duty which

rests upon all of them to do everything that can be done to improve the quality of medical service in the state and to make a good profession even better. I cannot conceive, by any chance, how such efforts as are being put forth here today can have any other effect than to tend toward the improvement of medical service and the better qualification of the medical profession of the state.

The topic assigned to me is one that deserves consideration by one better qualified for its discussion.

The responsibilities of the individual physician and the responsibilities of the organized profession are many and important. When I decided to study medi-

cine, I had already formulated for myself the highest possible conception of what medicine means, using the word "medicine" to include the profession of medicine and the practice of medicine. I have had great satisfaction in that simple fact. To my mind, the first duty, the first responsibility, that rests upon the physician is that he shall even before he starts to prepare himself for the practice of medicine, formulate for himself a high conception of what is involved in the life and the activities of a true physician.

It is not a difficult thing to do, if he will simply accept the conception which has been translated by the actions of true physicians throughout the ages into definite fact, namely, that the physician is the servant of the people; that he is engaged in work which none but he can do; that he is about to enter upon a profession, not a trade and not a business; and that he must, in all that he does, maintain all of its noblest traditions.

I sometimes think that some of our medical schools have not been careful enough in examining into the ideas and ideals that are entertained by prospective students. We might be better off if more careful examination had been made in that direction to the end that some undesirables who have gained entrance into the profession might have been excluded.

The next responsibility, in my mind, that rests upon the young physician is that he must prepare himself for giving the best possible service of which he can by any chance be capable. After having done that, the responsibility rests just as heavily upon him to maintain himself at the highest possible point of perfection, to the end that he may deliver adequate scientific service wherever his services are called for.

I was very much interested in thinking about men and measures in medicine, as I listened to Dr. Lahey and heard him describe his experiences with these diverticula and heard him admit openly and frankly the mistakes that he had made and how he had reasoned and worked and studied and perhaps experimented to find out the best way, to do the job in hand; and how freely he has given you the scientific knowledge he has acquired. That attitude is typical of the physician who really appreciates what it means to be a physician, and has always been typical of the true physician.

Another responsibility which rests upon the individual physician and on the profession collectively is that always it

should be remembered that the public is not made for the physician nor for the profession, but that the medical profession and the individual physician are made for the public. The patient, in a man's individual practice, always should come first. That has been the conception of high-minded physicians from the beginning of time.

Upon the medical profession collectively there rests the duty of providing proper guidance for the public in matters pertaining to health and to medicine. That responsibility can be discharged by the individual physician in his daily practice and, in a way to a larger degree through the effort of the organized medical profession.

It is a tremendous responsibility that rests upon the medical profession as a whole to maintain compact, efficient organization through which it can discharge its duty to itself and to the public. Of late years there have sprung up great numbers of medical organizations. It looks as though every fellow that happened to think about it has run off and organized some kind of a medical society. We have colleges and convocations and congresses and clubs and societies and associations and what not, almost without end. In my humble judgment, the situation has gotten to the point where it is fraught with grave danger to the interests of the entire medical profession of this country and, consequently, with danger to the public interest.

There is reason, perhaps, for the organization of independent societies, not directly affiliated with the regular medical organization as we have it in this country, to serve highly specialized groups. But I frequently wonder what it is that this multitudinous number of medical societies, made up as they are of the members of the regularly organized profession of the country, can do that could not be done just as well through county medical societies, state medical associations and the national organization composed of component county medical societies and constituent state medical organizations.

There has never been a time in the history of the American profession when there was such great need for compact organization or such great need for expression of the well-considered opinion of the medical profession through one great voice.

I think I can see evidences of dissipation of loyalty, dissipation of effort, waste of time and waste of money in the existence of so many independent medical societies. After long years of careful observation and

most conscientious study, I am convinced that the expression of opinion by so many groups may bring about embarrassing and really serious complications that will result in detriment both to the medical profession and to the public they serve.

The fundamental excuse, in my judgment, for the existence of the medical organization is that it may promote the art and science of medicine. It is all right for medical societies, for the organized medical profession, to attempt to deal with questions of material interest. It is their duty to do that. They should protect the rights of the practicing physician and of the profession. But I believe that any medical society that does not keep constantly in mind the fact that its first duty is for the promotion of the art and the science of medicine is doomed to failure.

There is a tendency in many places to relegate, in our programs, scientific subjects to the back seat and to discuss what we call "economic questions." Economic questions ought to be considered. They ought to be thoroughly and helpfully considered. But, I believe that when any society forgets that the promotion of the science of medicine is its first duty, it is not going to have very much influence in anything else. I cannot conceive how the organized medical profession can render better service to itself or to the public than by putting forth all possible effort to make every doctor in the organization a better doctor. The biggest duty of the medical profession to the public will be best served as the profession tries to make its every member a better qualified physician.

We have been much concerned, some of us, in late years about problems, as we please to call them, some of which really are problems of importance, some of which, to my mind are pseudo-problems. Some of these latter have been set up like windmills upon which their devisors might break their lances. Some of these problems that are real are going to be settled only through the processes of time. There are other problems of importance that organized medicine can do a great deal to solve. Even though we cannot find proper and final solution, much can be done in attempting to deal with them that will better conditions for everybody concerned. But we have wasted some of our time and effort in attempting to deal with matters that are not of very great importance and so have neglected others of more significant interest.

I like to believe, and I do steadfastly be-

lieve, that there is nothing in the world that can take the place of scientific medical service. Believing that, my conviction is to the effect that the best thing that organized medicine can do is to strive to promote the science of medicine and to do all that it can do to make its every member a better qualified physician. These courses that are being given here under the auspices of the Michigan State Medical Society and the Detroit College of Medicine and Surgery and, as I understand, the state university, are movements to that end and are worthy and greatly to be commended. Nobody can displace the physician who "delivers the goods."

There is a tendency in certain elements of the medical profession, and I am speaking hurriedly and not attempting to more than mention these points, to ridicule the ethics of the profession. There is an insistence which is surprisingly prevalent, though it comes from a minor group, that the principles of medical ethics by which we have been guided in our professional lives for these many years are out of date, not in keeping with the demands of the time. In the very element which sings that song the loudest there appears, to me, at any rate, to be a tendency to commercialize the practice of medicine. This element of the profession is a very minor one, but it does seem to me that they are making a great deal of fuss and that they are taking entirely the wrong tack. The great body of physicians of this country, who have the right conception and who respect the traditions and the ideals of the medical profession as they have been made throughout the ages, should speak out loudly and determinedly and make everybody understand that without ideas, without traditions, without principles of ethics, a profession cannot exist. The best protection that the public can have and that the individual patient can have is that protection which comes to him through the establishment and the observance and the maintenance of principles of ethics in the profession.

Just the other day I had a man say to me that the principles of medical ethics ought to be abolished almost in their entirety and brought down to a simple statement of the golden rule. Well, now, as a matter of fact, that is just about what the principles of medical ethics is. Every thread of the woof and warp of the golden rule runs through it from end to end. This same man in a little while told me that he believed that the medical profession, the

individual physician, ought to advertise. I didn't know it at the time, but I have found out since that he has perfectly good reasons of a commercial nature for entertaining the views he professes to hold.

There has been a very persistent propaganda on the part of certain elements of the public press to bring about advertising by the medical profession. Of course, we know that were we to yield to that point, were we to destroy that part of the principles of medical ethics which puts a professional ban on such advertising, it would be the loudest mouth that could do the most and the best advertising. Of course, we know that if one man advertises, every one must. The least qualified and the charlatan would be the best advertisers, the man of science and honor the poorest. The tendency to commercialize medicine must be stopped, and the only body in the world that can stop it is the great organized medical profession of the United States as it exists in the state associations and in the county societies.

If you want to make a business out of medicine, if you want to destroy it as a profession, abandon your principles of medical ethics and you will be in business up to your necks, your relations to each other will be unbearable and the public will be the sufferers, because scientific medicine will be destroyed and adequate scientific service will not be available.

I have been told, since I came here tonight, that I have been quoted in one of the Detroit papers in some way, I don't know how, with respect to the cost of medical care. I am going to try to tell you just a little bit in a very few words about a movement that has been under way for a year or two in the United States with which I am identified and in which connection I imagine I was quoted in an afternoon paper.

There is a great tendency on the part of laymen to get hold of the control of the practice of medicine and, as they see it, to extend the benefits of medicine rapidly to the entire public. I think they have a very wrong conception of all that is involved. But the tendency is there and the determination is there. An unusual amount of sickness in the family of a man in ordinary circumstances imposes a heavy financial burden.

Sensing this, a group of men two or three years ago organized what they were pleased to call the Committee on the Cost of Medical Care. As it was first constituted, it is my information, that committee

had only one practicing physician on it, and he one who practices medicine under conditions that are very different from those that obtain in the practice of the ordinary doctor. This committee announced a program, a five-year program of investigation and study of the conditions of medical service, with a view to establishing the facts about the cost of medical service. It was composed, according to my information, of economists, statisticians, teachers, and other laymen. A little later one or two physicians were brought into membership on the committee. I, as Secretary of the American Medical Association, was invited to become a member and brought the matter to the attention of the Board of Trustees of the American Medical Association. It was felt that as this committee was going on with its plans and as representatives of the medical profession had been asked to participate in its work, if that invitation were refused, the work of the committee would go on just the same. Five practicing physicians were added to the committee, which at the present time has some 50 members. I think that 17, maybe a little more, of that number are physicians, most of them practicing physicians. The committee has undertaken a program to cover five years of investigation into the conditions medical service and the costs. The committee has sent out some publicity material which I would not approve, but I am convinced that it is attempting earnestly to develop important facts, that if they can be properly applied, will be very helpful in the solution of very important questions.

The American Medical Association has taken over as its own enterprise two of these studies, the one dealing with capital investment in medicine and the other dealing with income of physicians. Those two studies are being made by the American Medical Association through its own machinery, and, as I said a moment ago, entirely as the enterprise of the association itself. The results of the study will be made available to the Committee on the Cost of Medical Care and to everybody else. We hope we are going to be able to develop some fundamental facts that will be of great importance and that these facts may be used to the benefit of physicians and to the benefit of the public.

There has been a tendency in some places to make it appear that the high cost of medical service is due entirely to the fees charged by physicians. I think we are going to be able to establish that

that is not true, and that the charges of physicians for services rendered constitute really a small part of the entire cost of medical service. We are already getting some very interesting information from various parts of the country both with respect to what their education and training and equipment have cost physicians and with respect to the income which they are able to earn in their practices.

It is interesting indeed to see how nearly the returns that have been received up to the present time, in the study on capital investment of medicine, have come to the line of averages. It is also interesting, as the returns come in in greater numbers, to formulate a guess as to what the average income of the physician of the United States is going to prove to be. We don't know yet, but I can tell you that it varies all the way from serious losses in the course of a year up to a good many thousand dollars, in the case of a very few physicians.

We have gone far enough to show, I think, that in times of depression the doctor is hit first and hit worse than anybody. I think we are going to be able to establish the fact that the medical profession is not to blame for certain conditions that have arisen within the last few years whereby men who are suddenly subjected to great strain by reason of illness in their families are financially embarrassed. There are many elements in that situation. We are passing through a great transitional stage brought about by many factors. The war had something to do with it. Developments in business have had a great deal to do with it. Who could have foreseen a few years ago that the manufacturing interests of this country would have adopted the mass production policy that is so much in evidence today? Who could have foreseen a few years ago that high pressure salesmanship was going to be developed to such an extent and that installment buying was going to play such an important part in the business affairs of the United States? The man in ordinary circumstances is the biggest consumer and the readiest target for the installment seller. He buys, under the pressure of modern business, the automobile, the radio, the washing machine, the vacuum sweeper and the piano player—and he buys them, for the most part, on the installment plan. Business demands payments when payments are due, and, insofar as I know, asks no questions as to

the bearing of illness on the ability of the purchaser to meet these payments. There is nobody who urges on the average citizen the need for making proper provision for meeting the costs of illness that he will almost surely be called upon to meet.

I hope that all of you here and all of the profession in Michigan will co-operate with us in order that we may develop, as nearly as possible, the actual facts through the two studies that are being undertaken by the American Medical Association.

I want to congratulate the Michigan State Medical Society and its officers and the other organizations which are co-operating so splendidly in this movement for extension courses for the benefit of the doctors, and on the splendid success that has attended their efforts so far. Michigan is very fortunate in many respects. You have, among other splendid officials, a governor who seems to appreciate the kind of protection that the public needs. You have a state health officer who, in my judgment, represents in splendid fashion the profession of medicine in a service that ought to be rendered by professional men. I hope that the entire profession of this state is going to uphold the hands of your health officer and thereby discharge one of the responsibilities that rests upon the medical profession, as individuals and in its organized capacity, because "the betterment of the public health" is one of the express purposes in the constitution of the regularly organized profession of the United States.

It seems to me that Michigan is fortunate, also, in having this great splendid city of Detroit and in its fine medical profession. It is pleasing to see that the medical profession of Detroit is co-operating fully with the state medical society in its program for the improvement of medicine in this state.

I have always thought that there is a peculiar responsibility that rests upon the physicians of the great city. They have advantages that none others can have, and advantages impose obligations. In my conception of medicine, responsibilities and obligations and privileges are practically synonymous. It is a great privilege to be a physician, to be a member of a great profession and of the organizations maintained by that profession.

PREVENTIVE MEASURES*

GUY L. KIEFER, M. D.

Commissioner of Health

LANSING, MICHIGAN

If I had been called upon a year or two ago, certainly if I had been called on five years ago, to talk to you about preventive measures, you would certainly have expected me to tell you what the State Department of Health is doing in the prevention of disease. Today I do not feel called upon to tell you anything of the kind because I firmly believe that the job of health agencies, both official and unofficial, is educational and I mean just that. I mean that it is our duty to educate the public to go to the doctors for the carrying out of preventive measures and it is your job to do this preventive work.

Of course, there are some general measures of a large scope like looking after water supplies, in a general way looking after food supplies, sewage disposal, etc., which are still the duties of boards of health. But when it comes to things that have to do with the health of the individual, these are indeed individual matters and belong to the physicians.

Let us take smallpox, for example. In the past, vaccination has been practiced whenever there was an outbreak of smallpox. Boards of health attempted to line up all of the exposures at such a time and everybody else whom they could reach, and vaccinate them. But we really haven't gotten very far. In something like one hundred and forty years a great many people have been vaccinated, but there are always epidemics cropping out. Smallpox is more or less endemic in Michigan.

Now I have a scheme in the back of my head which I have not tried to work out as yet and which requires the absolute, solid co-operation of the medical profession. If we could get every baby vaccinated at the time of its birth, it wouldn't be twenty-five years before we would have a vaccinated public. This work, of course, would have to be done by the doctors. My idea is that every hospital ought to have as part of its routine, the vaccination of every baby born in that hospital before it leaves the institution. On the other hand, doctors ought to agree that they will vaccinate every baby whose birth they attend outside of the hospital, before they discharge that case of obstetrics.

The law now requires that silver-nitrate be instilled into the eyes of every new-born baby by the attending physician, and why could we not have these vaccinations arranged by agreement rather than by legal compulsion?

Now let us look at typhoid. There ought to be a definite time to recommend typhoid

immunization and it occurs to me that that definite time should be before any one takes a vacation and if the doctors would help us spread the gospel that it is necessary for everyone before they go on their first vacation to be protected in this way against typhoid, we would be successful in this activity at least, we would have everyone immunized against typhoid for a number of years.

Much has been said recently, within the last ten years, about diphtheria immunization and many children have been immunized against diphtheria by boards of health directly and by their own physicians. Now I maintain that it is no longer the function of boards of health to do this work. The early work was done by way of demonstration. The demonstration has been made. Children who have been thus immunized have remained protected against diphtheria and it is now the duty of the doctors to immunize all unprotected children. Many immunizations have been done in the schools in the past. The Parent-Teacher Associations in this and other states are conducting what they call their "Summer Round Up." This "Summer Round Up" means corraling all children who expect to attend school this fall and seeing to it that they have any existing physical defects corrected and that they are immunized against various communicable diseases. In this state the Department of Health is assisting as much as possible in bringing about the results that the Parent-Teacher Associations desire, but the work of examining children, correcting physical defects and immunizing children, must be done by the physicians. The Michigan State Medical Society has endorsed this program of rounding up children, with the understanding that the clinical work be left with the doctors.

It has occurred to the Michigan Depart-

* Read before the second Post-Graduate Clinic. Under the auspices of the Post-Graduate Department of the University of Michigan and Alumni Association, Detroit College of Medicine.

ment of Health recently that if we could reach children much earlier in life than just before school age, and immunize them against diphtheria, it would be the best way to proceed. But this must be done through the doctors. In accordance with this thought, we determined to send out a letter to each doctor who is on record as having reported one or more births, nine months after such births have been reported, the letter being as follows: "During the month of you attended the births of the children listed below. If these children have not already been protected from diphtheria by the use of toxin-antitoxin, the time has come when they should be so protected. You, of course, understand that diphtheria is exceedingly fatal to young children and that practically all children of this age are highly susceptible to the disease and we believe that you can do no larger service to your clients than to immunize these children at this time. The department will be very glad to furnish the material for this immunization without charge if you will arrange to give it, or if you prefer, we will be glad to write to the parents of these children, sending them literature on this subject and try to impress upon them the necessity of this action, if you will note their present address, but we will not write to these people directly except at your request." We have had a great many answers and we estimate that although this new scheme was only started May 15th, over one thousand children have been immunized as a result of it. While we have received many answers, we assume that some doctors have gone ahead and immunized the children referred to in the letter without answering it.

On the other hand, some of the answers to us have been most gratifying and show that this active co-operation between the Board of Health and the physician does exist. I give one example. A doctor in a small town in Michigan received this letter on June 12th. He answered it as follows: "You may place a standing order with your clerks to send this information to any and all of my O. B. patients when the time comes for each." When doctors have gotten into a frame of mind where they say that their Public Health Commissioner may "write to my family" and they do this without even asking what he is going to write, it shows absolute confidence, and that has been lacking in the past.

The letter that we do write to the par-

ents when asked to do so by the attending physician is as follows:

"This letter is to inform you that the child born to you about nine months ago has been duly registered with the Michigan Department of Health. The registration of the child's birth by the physician in attendance is a matter of importance in establishing

1. The right to enter school.
2. The right to vote.
3. The right to make a contract.
4. The right to hold office.
5. The right to marry.
6. The right to work.
7. The right to inheritance.
8. The right to insurance.
9. The right to compensation.
10. The right to pension.
11. The right to obtain a passport.

"At any time that a copy of the registration of birth is needed for any of these purposes, we would be glad to furnish it from this office.

"Now that the child is nearly one year of age, it is felt to be a matter of importance to call your attention to the desirability of immunization against diphtheria. Diphtheria is a dangerous communicable disease that last year attacked 3,725 Michigan children. Three hundred and eighty-five of these children lost their lives to this disease. Many of those who survived will go through life with damaged hearts, kidneys and other vital organs.

"For five years the Michigan Department of Health, along with all outstanding public health agencies in the United States, has been advocating the use of toxin-antitoxin for the prevention of diphtheria. During this time there has not a single case come to our attention in which a child that was previously immunized with toxin-antitoxin has lost its life due to diphtheria. In fact, there were 27 counties in the state where there was not a single diphtheria death during the entire year of 1928. These were the counties where a large proportion of the children had been previously immunized with toxin-antitoxin. The death rate from diphtheria among school children is falling very rapidly because the bulk of this diphtheria prevention work has been done in the public schools. The next large group that must be reached with the protection of toxin-antitoxin is the group of children who are too young to be attending school. Children from six months of age to six years of age are particularly susceptible to diphtheria. Sixty-five per cent of all the cases occur in this

age group. Diphtheria is particularly fatal to these young children. Eighty-five per cent of the diphtheria deaths occur among these very young children.

"All competent health authorities agree that children should be immunized as soon after six months of age as possible. The Michigan Department of Health wishes to advise you that as a part of its efforts to "make diphtheria ancient history in Michigan," you should take your youngest baby, together with all other of your children who have not been previously protected with toxin-antitoxin, to the physician who was present at the time of birth, and have the important matter of immunization taken care of at this time.

"The physician who attended you has designated to this office that he is endorsing this diphtheria prevention campaign, and we earnestly advise that you take your unimmunized children to his office for this important service."

We believe that this way of reaching children is going to be very successful and we can extend it to scarlet fever after awhile but, of course, we cannot load too many things upon the public at once.

In the meantime the doctors should certainly charge for all of these services. This is preventive medicine and I want to repeat, it belongs to the practice of medicine. In my own opinion it is much more valuable to the people who receive it than our old fashioned way of practicing curative medicine.

A few days ago I was talking to a group of practicing physicians and health officers and I was suggesting some of the ideas

that I have presented to you, when one of the doctors called out something as follows: "Well, you have never asked us to do anything except immunization and we are doing that. Why don't you get up some literature for the doctors?" I consider his statement constructive criticism. Why not get up such literature? Why not send the doctors a bulletin on periodical examinations, for example, enclosing a sample blank for examination and calling their attention to the fact that when people come for such examination they should be given a definite answer as to their condition after they have paid their fee?

We could extend this sort of educational pamphlet for doctors to prenatal work, infant welfare work, and many other methods of preventive medicine that are now practiced by specialists and should be done by all doctors. I believe the profession is ready to receive such suggestions and perhaps we will in the near future, after we know that our baby immunization plan has succeeded, extend the work to other preventive activities. I am satisfied that we can accomplish much better results in this co-operative way than by attempting to have employees of the board of health do the clinical work. This plan will not be a temporary demonstration of necessary methods, but it will be a lasting practice on the part of all physicians.

Much has been said in the past about state medicine. I am not afraid of its arrival. I do not see how state medicine can come to pass if doctors will help work out this problem of public health and preventive medicine, as I have tried to indicate to you.

BLADDER DYSFUNCTION FOLLOWING PROSTATIC ABSCESS

R. E. Cumming, Detroit (Journal A. M. A., Jan. 12, 1929), records the case of a man, aged 60, with bladder dysfunction following prostatic abscess. A careful study of the case leads him to consider, in diagnostic procedures, the possibility of sudden massive destruction of the prostate with resulting grave bladder dysfunction. In a former instance the phenomenon was complete and permanent

urinary retention; in this case there was both retention and incontinence, and also a severe secondary hemorrhage. Diagnosis depends on a complete history, cysto-urethroscopic studies and urography. Satisfactory surgical intervention consists of a merging of the bladder and extravescical, pseudodiverticular cavity.

PROTEST TARIFF ON SURGICAL INSTRUMENTS

Due to protests from hospitals and medical associations, a number of Representatives at Washington are understood to be organizing to fight the new high tariffs on surgical and dental instruments in the bill now before the House. A speech made the first of this week on the House floor by Representative J. Charles Linthicum, democrat, of Maryland, declared that new duties of 70 per cent ad valorem on surgical instruments and 60 per cent on dental instruments would work undue hardships on hospitals. He has received, he states, strong protests from Johns Hopkins

University and Hospital. To increase the duty from 45 per cent to 70 per cent is uncalled for, he maintains, when the industry which seeks protection has only a \$2,000,000 capitalization in this country. Representative Louis Ludlow, democrat, of Indiana, has filed protests from the Indiana Medical Society. Representative John W. Summers of Washington, however, is both a physician and a republican, and is expected to go before the Ways and Means Committee in protest on the new surgical instrument rates.—Science Service.

DIAGNOSIS IN GYNECOLOGICAL CONDITIONS BY THE USE OF THE TRANSUTERINE INJECTION OF LIPIODOL AND ROENTGENOGRAPHY*

HAMPTON P. CUSHMAN, M. D., F. A. C. S.**
E. R. WITWER, M. D.

DETROIT, MICHIGAN

Owing to the brief period of time allotted us for the presentation of this subject a detailed review of the literature bearing on the numerous points of interest that have been brought out within the past few years must of necessity be omitted herein.

While the procedure is yet a comparatively new one, the literature is fairly abundant with reports pertaining to its use and it is the consensus of opinion of the majority that it is indeed a most valuable aid in diagnosis in properly selected cases. That it not only supplements the Rubin test but in many instances supplants it is the generally accepted opinion today, sponsored primarily by Jarcho³, of New York, and since confirmed by ourselves and many others. That the injection, if performed in properly selected cases under strict aseptic precautions, is a harmless procedure productive of much valuable information, is the common experience of practically all workers, included among whom may be mentioned Rubin⁸ of New York, Newell⁴ of St. Louis, Randall⁵ of Rochester, and many others.

Heuser² of Buenos Aires, one of the very first to employ this procedure, reported in 1925 on its successful use in arriving at a diagnosis of early pregnancy. No ill effects were reported and he was enabled to arrive at a diagnosis in every instance. His more recent work has contributed some very interesting data regarding the muscular action of the tubes and of a salpingo-uterine sphincter.

Romcke⁷ has been able to demonstrate histologically the anatomical substratum of this sphincteric action at the cornu.

Other interesting data is also reported regarding the muscular contractions of the uterus and tubes under various conditions, all of which may in time serve to clarify some of the yet not thoroughly understood factors pertaining particularly to sterility.

In presenting this report we wish to emphasize that we in no instance advocate its use as a short cut in arriving at an ultimate diagnosis, but we are firmly convinced that in many instances where modern methods of investigation fail, that the true pathology may be revealed by the employment of this procedure.

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For obvious reasons we do not advocate its employment in the presence of active infections or in cases of carcinoma. Following the recent fatalities recorded following the Rubin test, we are of the opinion that this procedure should not be employed in the presence of or immediately following any uterine hemorrhage.

It is our observation that, if carried out under strict aseptic precautions, the transuterine injection of lipiodol is a safe and valuable procedure which is well borne by the patient and is likewise devoid of any discomfort following. Of particular interest in this connection is our observation of the apparent therapeutic value of lipiodol observed in four cases of our series. All four, on bimanual examinations, revealed tender but not enlarged appendages, limited in motion. All four patients complained of typical symptoms of bilateral chronic pelvic inflammatory disease, and were diagnosed as such both clinically and roentgenologically. All four cases have remained symptom-free following the injections, and one case, on whom a definite bilateral tubal occlusion was demonstrated, has since become pregnant.

Rucker⁹ of Virginia, also reports a case on whom a lipiodol injection revealed bilateral tubal occlusion, yet who five months later became pregnant.

Jarcho³, in his last report, has demonstrated by repeated injections that inflammatory lesions previously existing were not present when subsequent injections were made.

We purposely omit herein a detailed description of our technic in order that more time may be devoted to our observations. In passing, however, we wish to emphasize the necessity of making stereo-roentgenograms in the antero-posterior and lateral and oblique positions, as it is only by this means that the true relationship of the structures can be determined.

It must be emphasized that in studying

the roentgenograms of injected uteri and tubes, that it is only the cavity and lumina of these structures that are outlined and not the organs themselves. Obviously one must thoroughly familiarize himself with the appearance of the normal cavity and lumina in order that he may recognize and interpret intelligently the abnormal. In either instance a satisfactory filling of the cavities under study must be obtained or corresponding errors in interpretation will result. In like manner the injection of too large a quantity of oil in a pelvis with patent tubes will interfere with the proper interpretation, as the excess of oil will cast a shadow which will be confusing with the shadow cast by the injected structures.

ROENTGEN FINDINGS IN STERILITY

We believe that it is in this group of cases that this procedure is of the greatest value, and it is entirely probable that the continued use of contrast mediums employed in conjunction with roentgenography in this group of cases will result in an increased knowledge of the various factors which enter into the production of sterility. That there are certain mechanical factors which are, as yet, not fully understood that may in time be revealed by further study, is entirely probable. Reference to the work of Rubin and Bendick³, Heuser², Reinberg and Arnstam⁶, and Bakke¹, only serves to further emphasize this point.

In our own experience sterility that is due to obstructive lesions or to developmental anomalies in the female can usually be explained by the findings on the roentgenograms of the oil injected uteri and oviducts.

In our experience a surprisingly large number of these individuals have infantile uteri, the cavities of which are so small that implantation of the fertilized ovum is extremely improbable. These uteri cast a small triangular, or in some instances bicornate-like shadow on the roentgenogram, which is decidedly smaller than the shadow cast by the normal uterine cavity. From 3 to 5 c.c. of oil is necessary to fill the average normal uterus, yet the cavity of the infantile type can readily be outlined with a much smaller quantity, in some cases as little as one-half c.c. being sufficient to fill the cavity.

Where sterility is due to tubal occlusion the exact location of the lesion can be accurately demonstrated by this procedure. The operator is thus enabled to more carefully select his cases where a salpingos-

tomy is contemplated, for obviously a tube occluded at or near the cornual extremity is less amenable to surgical correction than one occluded near the fimbria. Some workers have emphasized the importance of observing the passage of the oil from the uterine cavity through the tube under the fluoroscopic screen. While we agree that fluoroscopic observation gives an opportunity to observe the progress of the oil through the tube, we do not believe that the information thus gained is superior to the stero-roentgenograms unless one is attempting a study of the peristalsis or muscular action of these organs. In such cases fluoroscopic observation obviously would be most essential. That the Rubin test is truly a more practical diagnostic procedure in sterility studies must be conceded, yet the employment of the transuterine injection of iodized oils and roentgenography is productive of far more valuable information. This point is well brought out by reference to Mrs. E., aged 39, married nine years, with no history whatever of pelvic disorder. Pelvic examination revealed no palpable pelvic pathology, though a deep pelvis and a moderate but firm panniculus precluded the possibility of a satisfactory palpation of the fundus. Husband's secretion showed numerous active spermatozoa on three different examinations. The Rubin test on two successive occasions revealed both tubes patent. No explanation for her sterility could be given. She was subsequently referred for a lipiodol injection with the result that an infantile uterus with patent tubes was discovered. That this condition could have been discovered by examination under anaesthesia must be conceded, yet the procedure adhered to was certainly attenuated with much less risk and inconvenience to the patient. It has been further observed by us in numerous instances that cases on which tubal occlusion was diagnosed by the Rubin method were demonstrated to possess patent tubes when subsequently subjected to the procedure under consideration. That the same findings which we obtained would have been obtained had the Rubin tests been repeated is truly probable, yet the point is made to emphasize the more constant findings obtained in repeated lipiodol injections. In this connection it is worthy of mention that in many instances the oil will enter the finely constricted lumina of many tubes much more readily under a lowered pressure than when injected under high pressure.

ROENTGEN FINDINGS IN TUMORS OF UTERUS
AND ADNEXA

Our experience in tumors of the uterus is limited entirely to fibroids and these are considered according to their location in the uterus being sub-serous, intramural or sub-mucous. We agree in the opinion of Newell¹, Jarcho³, Heuser² and others, in that the use of lipiodol and roentgenography in the diagnosis of these conditions is of value only in those cases in which the cavity of the uterus is enlarged, distorted or encroached upon. Owing to the fact that the majority of tumors of the uterus can be readily discovered by a thorough pelvic examination, the number of instances in which the employment of this procedure would be of value as a diagnostic aid is necessarily even more limited, comprising, in the vast majority of instances those small submucous and intramural growths which, on account of their size and location, are frequently not palpable, yet are of sufficient dimensions to produce the characteristic filling defect shown on the stereoroentgenograms. In this connection it is worthy of mention that of these growths, the submucous fibroids would obviously be the more early diagnosed, as distortion of the uterine cavity would not necessarily occur in the intramural or subserous until they had attained considerable dimensions. Of particular interest in connection with distortion of the uterine cavity in conditions which are not palpable is the case of a young girl, single, 17 years of age, who had profuse bleeding with each period for one year and frequent inter-menstrual spotting. A roentgenogram of her injected uterus showed a peculiar sierrated irregularity in the contour of the uterine cavity which we believe is due to a diffuse polypoid endometrium. Unfortunately, this patient has as yet not submitted herself for operation. In considering distortion of the uterine cavity as produced by fibroid tumors, it must be borne in mind that any type of distortion may be produced, dependent, of course, on the location and size and number of tumors present in a given uterus. In many instances enlargement of the cavity has been observed to such extent that as much as 50 to 65 c.c. of oil were required to completely fill the cavity. Owing to the ease with which the pedunculated subserous tumors are recognized, plus the fact that distortion of the cavity is not necessarily an accompaniment of such conditions, the use of this procedure in this type of tumors is not of diagnostic value.

In conditions, however, where the pelvis or lower abdomen is occupied by several tumor masses the employment of the transuterine injection of lipiodol and roentgenography will serve to differentiate the uterine body from these masses and thereby afford the surgeon much valuable information, particularly in cases where conservative surgery is desired.

ROENTGEN FINDINGS IN PREGNANCY

We candidly admit our apprehension before injecting our first case of pregnancy. We further admit that for quite some time we were very reluctant to undertake roentgen studies of the oil injected gravid uterus, believing that the dangers encountered in such procedures would be far greater than the value of the information obtained. A careful review of Heuser's work on the early diagnosis of pregnancy by the use of iodized oils and roentgenography, however, served to partially allay this belief. Heuser concludes that, if performed under strict aseptic precautions, the procedure is well borne in the gravid state and is attended with no danger to the patient or to the developing foetus.

As added evidence of how well the gravid uterus stands this procedure, Heuser further states that he and his colleagues injected the pregnant uteri in tuberculous patients in whom a therapeutic abortion was indicated, in an effort to produce an abortion, but that in all instances they were unsuccessful. He further concludes that in the earlier weeks of pregnancy a positive diagnosis can be accurately made by the employment of this procedure. Despite the very excellent report of Heuser², we still feel that this subject should be approached most carefully and for that reason have only selected those cases for injection on which a therapeutic abortion was contemplated. Three such cases were injected by us, and while we admit that this number is not sufficient to permit one to formulate any definite opinion, yet it is particularly interesting to note the very close similarity in our findings as compared with Heuser's. Both cases were injected before the ninth week of pregnancy and both showed decided evidence of a marked increase in size of the uterine cavity greatly in excess of what one would observe in any other condition, considering the size of the fundus. Each case required over 35 c.c. of oil, or approximately 10 times the amount required to fill the normal cavity. Of further interest is the fact that the triangular outline of

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the normal uterine cavity is lost in the early weeks of gestation and instead becomes more oblong or ovoid. The site of attachment of the ovum can be readily demonstrated, by the characteristic filling defect evident on the roentgenogram. Of particular interest in this connection is the peculiar web-like distribution of the oil about the unattached portion of the ovum, a point which is of especial value in the differential diagnosis of myomas and early pregnancy.

In our limited experience the injections were well borne by the patients and neither experienced any untoward symptoms following the injections. We can readily see whereby, in the occasional case where a diagnosis of early pregnancy might be essential, that this procedure would be of some value. Probably of greater practical value, however, to the gynecologist, is the opportunity which this procedure presents for the differential diagnosis of soft uterine myomata and early pregnancy. Though our work in this connection has been limited, owing to the small number of pregnancies available for injection, yet the results obtained to date are sufficient to convince us of its practical application in selected cases.

ROENTGEN STUDIES IN OVARIAN TUMORS

The value of this procedure as an aid in the diagnosis of ovarian tumors has been, up to the present time, limited to the more common type of tumors encountered, namely, ovarian cysts. In our experience the small, simple follicle cysts cannot be visualized by the use of lipiodol injections and roentgenography. Stein and Ahrens¹⁰ of Chicago, however, by combining the pneumoperitoneum with the transuterine injection of lipiodol and roentgenography, have been able by this procedure to demonstrate on roentgenograms the small, simple follicle cysts so frequently encountered, yet probably less frequently palpated by the routine bimanual examination.

Our experience in ovarian cysts is limited to those of larger size which can be readily palpated by a bimanual examination. The findings vary in proportion to the size of the tumor. It has been observed that in some instances the oil, in passing through the tube, will distribute itself around the border of the cysts, thus enabling them to be readily outlined on the roentgenograms. In cysts of larger size, where the tube is attached to the cyst wall and as a result is elongated and distorted, this peculiar type of elongation

is readily demonstrated by the shadow cast on the roentgenogram by the oil injected tube. As one would naturally expect, the uterine cavity is not distorted in these cases unless the cyst is of such dimensions as to encroach upon the body of the uterus itself. In our experience with this procedure in ovarian cysts we feel that its greatest practical value lies in its ability to differentiate ovarian cysts from soft uterine myomata.

ROENTGEN FINDINGS IN ENDOMETRIAL FISTULAE

The value of this procedure in this group of cases can readily be appreciated, as in any instance wherein the fistulous tract can be penetrated by the oil a clear cut picture of such tract can be demonstrated. One is thus enabled to determine the origin of the fistula as well as its true course. The use of this procedure in these cases, however, proves a little more uncomfortable to the patient, owing to the fact that more time is consumed to complete the injection and moreover the distention of the uterine cavity by the oil injected under sufficient pressure to penetrate the fistulous openings is necessarily increased.

Newell⁴ of St. Louis, has demonstrated the value of this procedure in the determination of the extent of injury done to the uterus in instances where foreign bodies have been inserted in an attempt to produce an abortion. If the wall of the uterus has been penetrated by this procedure, the exact location is readily demonstrated, and if the foreign body is still in the pelvis its relationship to the pelvic structures can be shown.

Included in our series are two cases which present a most unusual distribution of lipiodol in the usual regions of the ureters; one case having a unilateral, the other a bilateral distribution. The exact changes which give rise to these peculiarities are open to discussion, but in our opinion are most probably due to persistent Muellerian ducts. Slides made from the original roentgenograms demonstrate these peculiarities quite clearly.

Our report is based on a personal observation and a study of 250 injected uteri and the results obtained are sufficient, we feel, to recommend the employment of this procedure in properly selected cases.

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PHRENICO EXERESIS AND EXTRAPLEURAL THORACOPLASTY IN THE TREATMENT OF PULMONARY TUBERCULOSIS

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The basis of the modern sanatorium treatment of pulmonary tuberculosis is rest in bed, fresh air, sunshine, and an abundance of good food. By such treatment, especially if begun early, the progress of the disease is arrested in the majority of the cases and improvement is prompt and progressive. But some patients treated from the earliest onset of symptoms fail to improve or lose ground progressively. In a considerable proportion of the cases the diagnosis is not made until after the disease has become extensive and abscess cavities may already have formed. Some develop complications such as hemorrhage or empyema. For such cases pulmonary compression offers the best prospect of improvement and in a large proportion of them the only hope of a cure.

The object of all forms of surgical treatment is to collapse and compress the diseased lung in whole or in part and to obliterate secondary empyema.

The methods by which a complete pulmonary collapse may be achieved are artificial pneumothorax and extrapleural thoracoplasty. A partial collapse is obtained by phrenico exeresis and by pneumolysis. These methods differ as to indications, but are identical as to principle involved.

The fundamental principles on which pulmonary collapse is based may be set forth as follows:

1. Rest of the diseased lung. In the great majority of cases this is by far the most important end attained. When the patient with an active tuberculosis is kept in bed at absolute bodily rest a minimum of oxygen is required and the breathing is therefore slower and shallower than during bodily activity, but the diseased lung is not at rest. It is kept in constant activity expanding and contracting in volume with each respiratory cycle, say 18 times a minute, 1,000 times an hour, 24,000 times each day. The fluctuating intrapulmonary pressure incident to the change in lung

volume exerts a pump-like action on the lymph and blood stream accelerating this flow, washing the toxic products in the tuberculous process into the general circulation. It is these poisonous products which keeps up the fever and causes the loss of appetite and weight, night sweats, and other symptoms. The constant movement of the lung also tends to spread the tuberculosis bacilli through the avenues of the blood vessels and lymph channels. Increased cough incident to it tends to fatigue the patient and may spread the disease by drawing the bacilli laden sputum into uninvolved portions of the lung.

In the proportion as the lung is put at rest these harmful effects of the respiratory motion is reduced. Complete collapse means practically complete rest of the lung.

2. Pulmonary collapse makes possible complete scar tissue shrinkage of the lung. When a tuberculous lesion heals it does so by scar tissue formation similar to the scar tissue healing of a wound or burn. But under normal conditions the scar tissue shrinkage of the lung is limited by the unyielding nature of the chest wall and of the mediastinum. The sunken supra and infra claviclar fossae, the narrowing of the intercostal spaces, and increased downward slant of the ribs, and the shifting of the mediastinal structures towards the affected side, so often observed in chronic fibroid cases, constitutes irrefutable evidence of the effort of the lung to contract, and most convincing evidence of the need of mobilization of the lung in

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order that the scar tissue contraction may be complete, thereby the more completely encapsulating the tuberculous lesion. Not infrequently a complete dextrocardia or sinistocardia develops which may produce mechanical circulatory embarrassment, constituting in itself an indication for relief of tension on the mediastinum by surgical means.

3. Pulmonary collapse stimulates increased fibrous tissue formation in the diseased lung. It has been observed experimentally in animals that if a normal lung is kept in state of collapse for a prolonged period a generalized fibrosis results. In chronic empyema and after prolonged artificial pneumothorax collapse of the lung a similar generalized fibrosis has often been observed. Following thoracoplastic collapse of a bronchiectatic lung I have in three instances observed a similar condition. When one reflects that it is only by fibrous tissue formation that a tuberculous lesion is arrested the possible salutary effect of a pulmonary collapse in case of an active spreading lesion becomes easily apparent.

4. Tuberculous pulmonary cavities of any size may be obliterated only by an approximation of their walls secondary to lung collapse. Tuberculous cavities often attain the size of a hen's egg and may become much larger. They usually become secondarily infected with pyogenic organisms. When this occurs the absorption of pyogenic toxic products is added to those due to the tuberculosis infection. This absorption is increased by the stagnation of the pus so apt to occur in these rigid cavities. The harrassing cough incident to incomplete evacuation fatigues the patient and tends to spread infection to other portions of the bronchial tract. Such cavities can empty and heal only following the collapse of their walls with the involved portion of the lung.

5. Pulmonary collapse is the most effective method of arresting and preventing recurrence of hemorrhage. Profuse pulmonary hemorrhage that is not controlled by absolute rest and suitable medication demands pulmonary collapse. Even when it appears to be under control, uncertainty and anxiety as to its recurrence persists. If the bleeding is from an eroded vessel in the wall of a cavity, as is usually the case, the pulmonary collapse or compression serves the double purpose of arresting the hemorrhage and collapsing the cavity.

6. Healing of the major pulmonary

lesion by pulmonary collapse indirectly promotes healing of secondary tuberculous lesions elsewhere. Tuberculosis often affects both lungs and may involve almost any other organ or tissue together with one or both lungs. If the lesion in the other lung or other organ is mild and not progressive, the arrest of such secondary lesion is often observed after the more extensive diseased lung is collapsed and its process is arrested. I have observed cases in which a mild tuberculous laryngitis has entirely cleared up, and other cases in which all clinical evidences of a small cavity in the opposite lung have entirely disappeared following thoracoplasty. Beck has shown that if a tuberculous orchitis is induced in guinea pigs by injecting tubercle bacilli into the testicle and a secondary tuberculous arthritis is produced by similar means the tuberculous arthritis shows a tendency to heal in a much larger proportion of the animals following orchidectomy than in the control animals in which the diseased testicle is not removed. The favorable effect in the human suffering from two or more lesions is often observed following the removal of a tuberculous testicle, kidney or a tuberculous salpinx. Figuratively speaking, it seems that the body may be considered to possess a certain fixed number of defense units which may be deficient in number to cope with two or more separate lesions at one time, but with sufficient reinforcement to conquer the main lesion it is able to concentrate its own defense units on the remaining process and overcome it.

7. Pulmonary collapse reduces the menace of the tuberculosis carrier. Many patients with chronic pulmonary tuberculosis have so far overcome their infection that they are in fair general health. They may show but little loss of weight or strength and are able to be about, but continue to have a productive tuberculosis bacilli laden sputum. Such patients are a menace to society just as much as a typhoid bacillus carrier, leaving out of consideration the probability that sooner or later they are likely to develop a tuberculous enteritis or other lesion. Pulmonary collapse offers the only means of dealing with such cases.

The methods of surgical collapse are extrapleural thoracoplasty, phrenico exeresis and pneumolysis. As phrenico exeresis and pneumolysis result only in a limited amount of collapse as compared with artificial pneumothorax and thoracoplasty they will be considered only as auxiliary

to thoracoplasty. Artificial pneumothorax collapse is by common consent classed as a part of the medical treatment and its discussion therefore lies beyond the limits set for this paper. Inasmuch, however, as the principles involved are identical with those of surgical collapse and because the indications are so generally considered to be the same it may be in order to discuss briefly the relative indications for artificial pneumothorax and for thoracoplasty, the only surgical method in which the degree of collapse of the lung is comparable.

The general assumption among those interested in this field seems to be that if pulmonary collapse is indicated the method of choice is always artificial pneumothorax, that only in case adhesions prevent artificial pneumothorax collapse is thoracoplasty to be considered.

This assumption seems to be based on the fact that artificial pneumothorax collapse is safer, more complete, and more conservative, since there is a prospect of ultimate restoration of the lung to function. It also allows for re-expansion of the lung in case the collapse is for any reason not well tolerated. In short, pneumothorax is considered the treatment of choice, thoracoplasty the treatment of necessity in suitable cases, among those in which adhesions prevent adequate pneumothorax collapse of the diseased portion of the lung.

This doctrine seems to me far too sweeping. A more fundamental conception is that which takes into consideration the nature of the pathological process. Pulmonary tuberculosis in which lung collapse of any kind is to be considered may be subdivided into the active exudative type, the chronic proliferative fibrotic type, and a third mixed group. In the first, exudative type, pleuritic adhesions are less common, the patient is a relative poor surgical risk and there is always question as to the fate of the better lung. In such cases pneumothorax collapse, if it can be achieved, is the only method to consider. In case of the chronic fibrotic type, on the other hand, with marked evidence of fibrous tissue shrinkage, the opposite lung has proven itself by the test of time to be relatively intact and the patient is usually a relatively good surgical risk. Thoracoplasty, in my opinion, is then the treatment of choice irrespective of whether or not pneumothorax collapse is possible. In such cases the prospects of complete re-expansion of the lung are nil, the risk of ultimate secondary infection of a persistent

pneumothorax cavity considerable, and the hazard of thoracoplasty collapse is relatively small. Under such circumstances thoracoplasty, in my opinion, is the treatment, not of necessity, but of choice. Tersely stated, artificial pneumothorax collapse is the only treatment to consider at the one extreme, represented by the exudative type of lesion; thoracoplasty, the treatment of choice at the other extreme of chronic fibrotic lesions, but in the large group of cases between these extremes thoracoplasty is to be advised only after artificial pneumothorax has been tried and found wanting.

The indications for the two or three stage extrapleural thoracoplasty with the above reservations with respect to artificial pneumothorax may be enumerated under the following heads:

1. Chronic unilateral fibrosis phthisis.
2. Adhesions preventing artificial pneumothorax collapse of the diseased portion.
3. Persistently recurring sterile effusions.

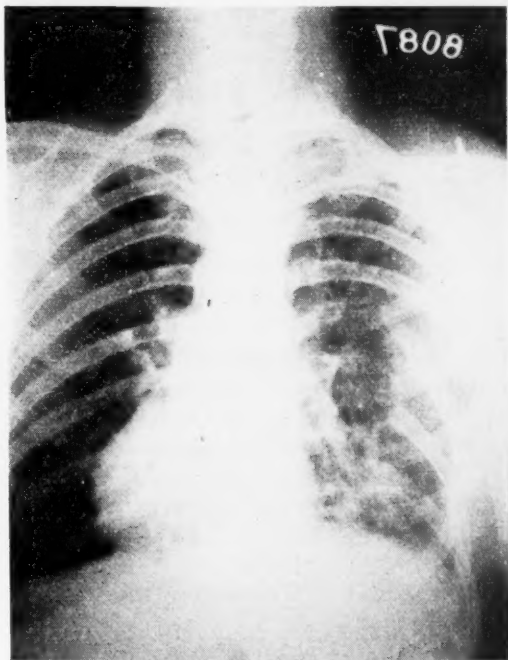


Figure 1

I. L.—Pulmonary tuberculosis of the right lower lobe with cavitation. Roentgenogram showing small degree of collapse resulting from resection of the lower five ribs done elsewhere one year before thoracoplasty was begun.

4. Fixation of the lung in a collapsed position preventing re-expansion after pneumothorax treatment is completed.
5. Infected tuberculous empyema.
6. Excessive displacement of the mediastinal structures after healing of the tuberculous lesion.

7. Severe or recurrent hemorrhages in case adhesions prevent artificial pneumothorax.

1. *Chronic unilateral fibrosis phthisis.* Patients with this type of lesion usually have a chronic cough with more or less sputum containing tuberculosis bacilli.

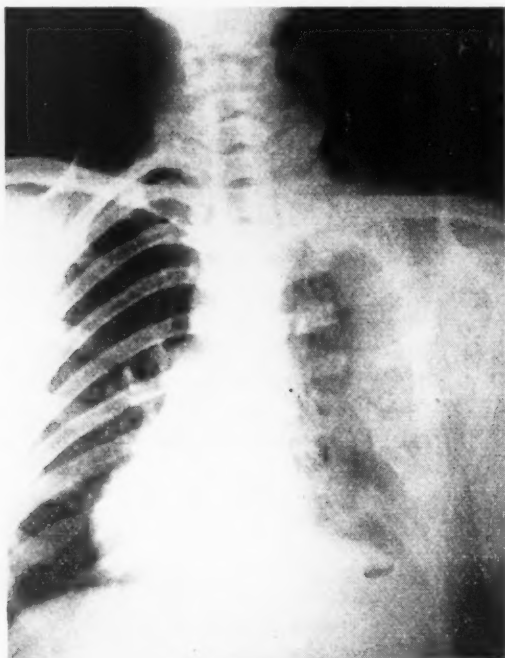


Figure 2

I. L.—Roentgenogram showing complete collapse resulting from resection posteriorly of the upper eleven ribs including resection of the regenerated lower five.

Their relative high degree of resistance is evidenced by good general condition after years of disease and by the marked fibrosis shown by the retraction of the chest wall, mediastinum, and in some cases the diaphragm, and also by the fact that the process remained localized essentially to one lung. The opposite lung, as a rule, does show evidence of some involvement in the nature of a few localized rales or dullness to percussion and increased density on the roentgenogram. Chronic unilateral involvement in the strict sense of the word is rare. What is meant by essentially unilateral involvement is that any lesion in the better lung must be localized, healed, or at least, quiescent. The majority of the 68 cases which form the basis for this paper were of this type.

2. *Adhesions Preventing Artificial Pneumothorax of the Diseased Portion of the Lung:*—Following artificial pneumothorax the roentgenogram frequently reveals a good collapse of the relatively less involved portion of the lung; usually the lower portion, but no collapse of the chiefly

diseased adherent apex. (Fig. 1). Even prolonged attempts at collapse of the adherent portion using positive pressure usually fails to achieve its collapse. Thoracoplasty is indicated in such cases. If the better lung has proven itself equal to the added respiratory load that the collapse of the healthy portion of the opposite lung involves, it may be assumed that thoracoplasty will be well tolerated by it. Some surgeons advise localized upper lobe thoracoplasty in such cases, but if any considerable portion of the lung gives evidence of involvement, complete thoracoplasty would seem to me the safer procedure.

In seven cases in this series thoracoplasty was performed following such incomplete artificial pneumothorax collapse. In six there was a complicating purulent effusion.

3. *Persistently Recurring Sterile Purulent Effusion:*—A large serous or hemorrhagic effusion should be replaced by air. A sterile purulent effusion may clear up under similar treatment, but usually it does not. (Fig. 1). Prolonged absorption from such an effusion leads to visceral

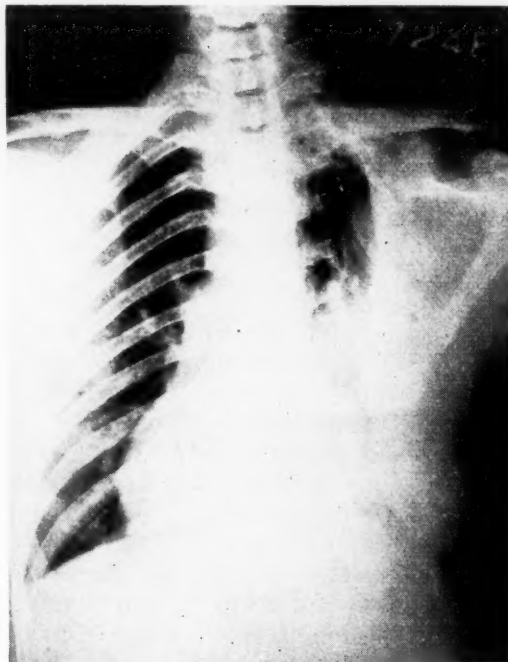


Figure 3

I. L.—Roentgenogram showing a relatively complete collapse of the involved lower lobe following complete costatectomy.

damage. There is always some risk of secondary infection which adds greatly to the difficulty and hazard of later attempt at obliteration of the cavity. Occasionally a sterile purulent effusion will perforate into a bronchus. In one such case in my experience the patient was drowned by the sud-

den exacuation of the pus into the bronchial tree. A marked grade of thickening of the pleura and of structural changes in the ribs incident to its cicatricial contraction is often observed in cases of long standing. Such effusions should be aspirated and the cavity obliterated by thoracoplasty as soon as their chronicity becomes evident.

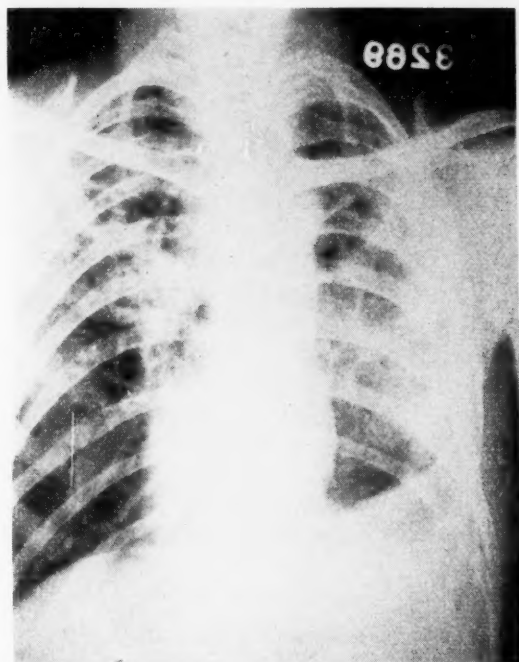


Figure 4

E. V. L.—Bilateral pulmonary tuberculosis. Extensive involvement on the right before phrenico exeresis.

coplasty as soon as their chronicity becomes evident.

4. *Fixation of the Lung in Position of Collapse following Prolonged Artificial Pneumothorax Treatment*:—Such fixation is evidenced by failure of the lung to expand on stopping or lengthening the interval between pneumothorax refills. A negative tension develops, which may reach 30 centimeters or more of negative water pressure. A pleural effusion is likely to develop in such cases presumably from the cupping action of the negative tension. In one case in my experience, after five years of refills a negative tension of about 30 centimeters water pressure developed in three weeks after a refill. Eventually an effusion formed which became secondarily infected.

5. *Infected Tuberculosis Empyema*:—Secondarily infected tuberculosis empyema that follows “idiopathic” pleural effusion often do well treated as an ordinary empyema with a circumscribed plastic operation for the usual residual cavity. In any case, however, in which the lung on the af-

ected side is known to be tuberculous and particularly if the empyema is of long standing precluding any prospects of re-expansion of the lung, a double indication exists for thoracoplasty. These patients usually require preliminary treatment for the secondary pyogenic infection and often a complete costatectomy with resection of the parietal pleura is necessary for complete healing. Such cases fall under the relative indications for a multiple stage operation. In this series there were 14 cases of tuberculous empyema, 4 secondarily infected requiring multiple stage operation.

6. *Excessive Displacement of the Mediastinal Structures after Healing of the Tuberculous Lesion*:—Marked extensive fibrosis of one lung occasionally produces excessive displacement of the heart and other mediastinal structures towards the affected side. In four instances of this series a complete acquired dextrocardia was produced. Three of these patients had a tachycardia and dyspnoea, but showed no other findings suggestive of an active

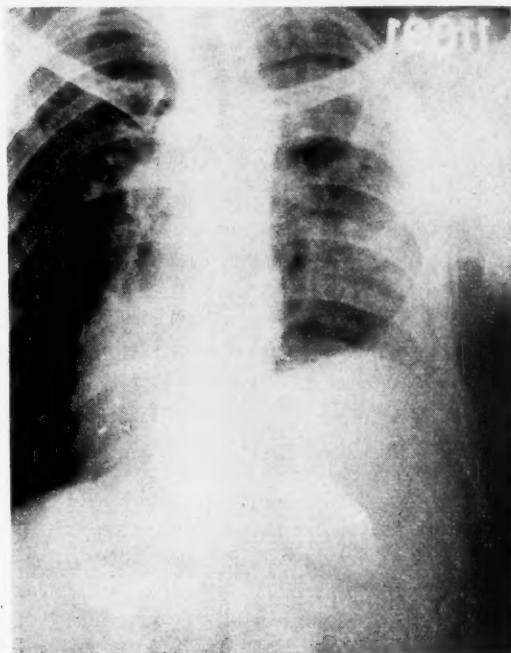


Figure 5

E. V. L.—Roentgenogram after phrenico exeresis. Patient gained sixty pounds in weight and is relatively symptom free two years following the operation.

tuberculosis. In such cases the symptoms seem to be chiefly of mechanical origin. Thoracoplasty resulted in marked relief of symptoms in these cases even though the displacement of the mediastinal structures in large part persisted.

7. *Severe or Recurrent Hemorrhage*:—

Repeated or profuse hemorrhage may necessitate thoracoplasty as a final resort if adhesions prevent artificial collapse even in cases which are relatively unfavorable for thoracoplasty. A localized thoracoplasty over the most involved portion or a pneumolysis should be the first step. In

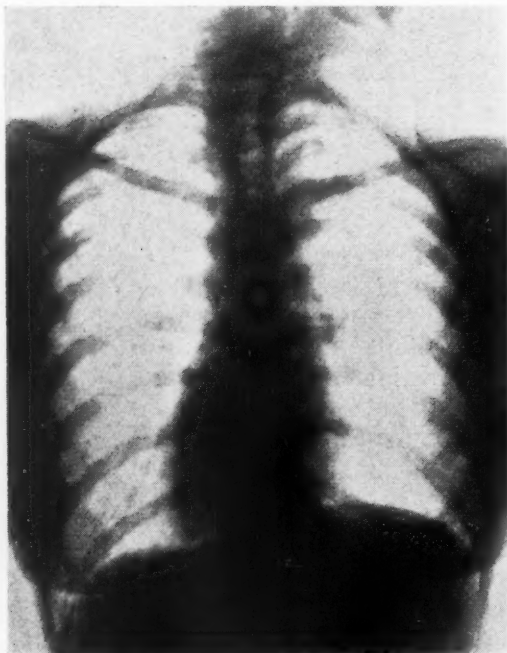


Figure 6
Mrs. C. H. M.—Right pulmonary tuberculosis. The roentgenogram taken during the incipient stage. Note heart in normal position.

a recent case the patient had repeatedly been exanguinated and in extremis and had been revived only by emergency transfusions. There was a question of a lesion in the other lung. He withstood a three-stage operation done at weekly intervals and was in better condition immediately afterwards than before the thoracoplasty was begun. Another patient belonging to the active exudative type of tuberculosis and with profuse hemorrhages came to operation with a pulse of 150 and in every way in poor condition. The hemorrhage was completely checked and the patient's improvement to date has been most remarkable.

RELATIVE INDICATIONS FOR A MULTIPLE STAGE THORACOPLASTY

By a multiple stage thoracoplasty is meant an operative collapse divided into as many stages as necessary and with as much time between the various sittings as the patient's condition may demand.

It is universally agreed by all who have had experience in this field that the proper choice of patients is most important, that

pitfalls may lead even the most wary to grief. Chronicity, fibrosis type of unilateral lesion and relatively good condition of the patient are emphasized as the prerequisite for reasonably good results. But such stringent indications, absolutely necessary as they are for a one or two stage operation, leave a large group in which operation is indicated in principle since pulmonary compression is desirable but pneumothorax collapse impossible on account of adhesions. For such cases a multiple stage operation offers a fair prospect of improvement, if not cure.

Among the types of cases in which such a procedure may be applied may be mentioned four groups as follows:

1. *Patient with Mixed Fibrosis and Exudative Lesions:*—Patients with such lesions typically have fever, increased pulse rate, and marked weight loss. They are usually bedridden at least in large measure. If there is evidence of fibrosis it is usually not well marked. Cases are observed, however, showing every evidence of a progressive lesion after years of fibro-

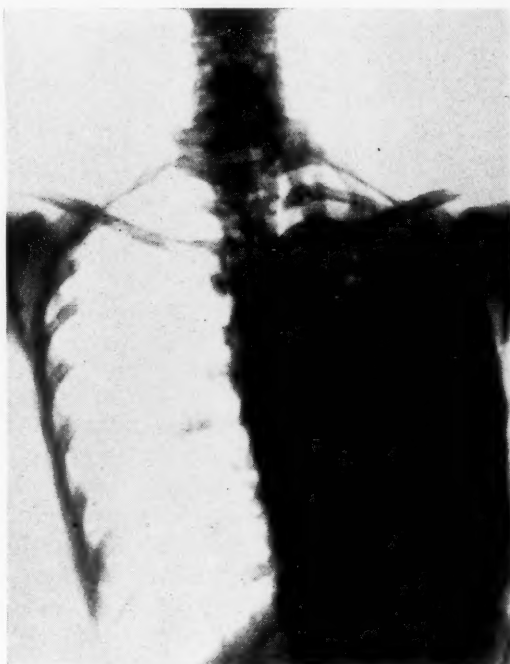


Figure 7
Mrs. C. H. M.—Roentgenogram taken eight years later showing very extensive right-sided involvement with complete dextrocardia. Patient in the terminal stages.

sis which may be of extreme grade, but the other lung remaining, clinically speaking, uninvolved. (Fig. 4). In 28 cases in my experience a multiple stage thoracoplasty (from 4 to 12 stages) was followed by improvement approximating a cure in 27. One died.

2. *Moderately Extensive Healed or Localized Quiescent Lesion in the Opposite Lung:*—In many cases the status of the better lung with respect to activity remains a matter of uncertainty. In such cases the ordeal of a one or two or even three stage operation may result in activ-

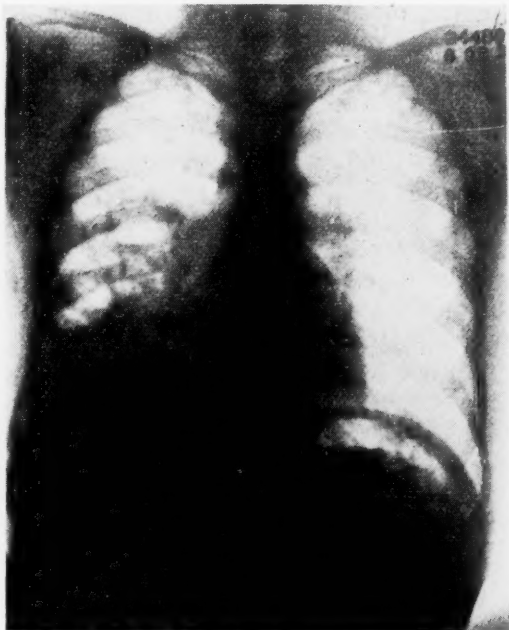


Figure 8

B. T.—Right lower lobe pulmonary tuberculosis following phrenic nerve resection.

ity when a more gradual collapse might have prevented it. Pneumonia process which may complicate thoracoplasty is, in my opinion, more likely and of more serious consequence than if the patient has been kept in fairly good condition by a more gradual collapse.

3. *Extra-Thoracic Tuberculosis of Mild Grade or Non-Tuberculous Disease:*—Many patients give a history and findings suggestive of a mild degree of peritoneal tuberculosis or there may be a mild lesion in the larynx, the kidney, bone, or elsewhere. Such patients may be in relatively much poorer condition than appearances indicate and a minimum operative procedure may be withstood when a more extensive operation would result in complications.

4. *Childhood and Advanced Age When Operation is Otherwise Indicated:*—The advantages of a several stage operative procedure here is obvious. By lessening the gravity of the ordeal the indications may be extended beyond the ordinary age limits.

CONTRA-INDICATIONS

The contra-indications to thoracoplasty

of any type may be stated catagorically as follows:

1. Rapidly progressing unilateral lesion: It must be emphasized that unilateral involvement in itself does not constitute an indication for thoracoplasty. (Fig. 17).

2. Active progressive tuberculosis in the opposite lung: As stated it may be very difficult to decide whether or not a lesion in the better lung is quiescent or active. The collaboration of an internist who has followed, or who will observe the patient for a sufficient period of time to determine this point, is essential.

3. Active or extensive extra-pulmonary tuberculosis: Anyone who has observed the necropsy findings showing involvement of visceral organs far more extensive than clinical findings would indicate will have been impressed by the necessity of not under-rating the significance.

4. Conditions contra-indicating any major surgical procedure: While each step of the multiple stage operation is in itself hardly to be classed as a major pro-

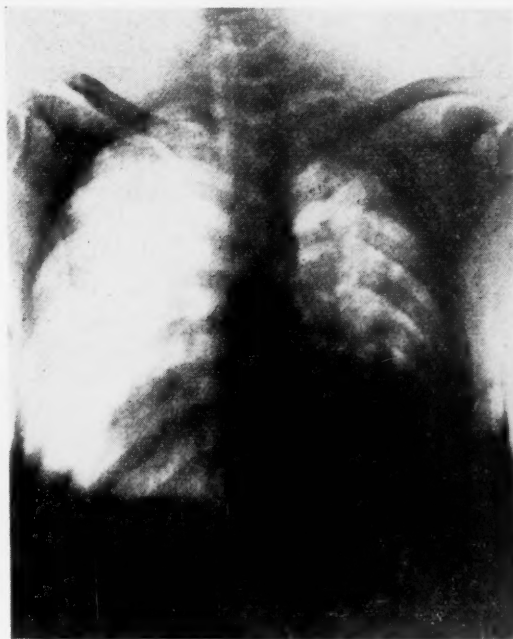


Figure 9

B. T.—Roentgenogram showing incomplete collapse of the lung after completion of the posterior thoracoplasty.

cedure, the combined effect of the stages should be so considered. Some patients are in too poor condition to withstand even a first stage operation.

THE ESSENTIALS OF OPERATIVE TECHNIQUE

The most important features of the operative procedure seem to me to be the following:

1. Rigid asepsis: Patients with pulmonary tuberculosis as a group withstand secondary infection badly. If a one or two stage operation is performed, a very extensive field is involved. If a multiple stage operation is performed and infection occurs following any one of them, the operative field of the later stages will also become infected. The asepsis should be as rigid as for a brain or bone graft operation. Operative trauma should be reduced

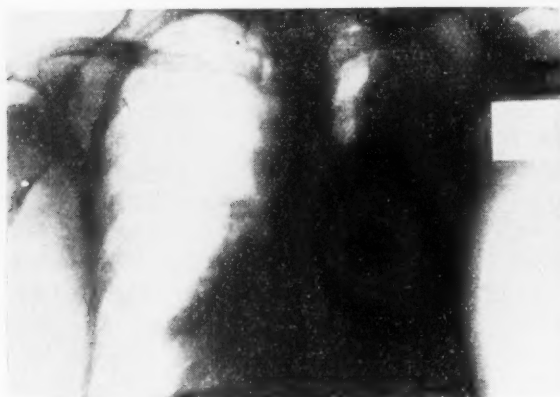


Figure 10

B. T.—Complete collapse of the lung after complete costatectomy.

to a minimum and hemastasis as complete as possible. Drainage is a lesser evil than the risk of infection in an undrained wound with serous accumulation. I employ a buried drain having only a piece of catgut tied to the end of the drain protruding through the skin. The drain is removed completely in 24 to 48 hours.

2. Efficient regional anesthesia: Local and nerve block anesthesia is a very important safeguard, particularly in case of patients having a large amount of cough and sputum. Combined with morphine and scopolin, the operation can often be completed without any general anesthesia. If the surgeon prefer to operate under general anesthesia, a much smaller amount of general anesthesia is required if combined with regional infiltration and nerve block. If general anesthesia is used, my preference is for ethylene as the most effective non-irritating anesthetic available. I consider the use of ether as adding unwarranted additional risk.

3. Resection of the first to and including the eleventh ribs for a complete thoracoplasty: One occasionally sees a patient who has had an incomplete operation with incomplete collapse and unsatisfactory result. The resection of the first rib is not particularly difficult or hazardous, provided adequate exposure is secured and

the periosteum is completely separated all around the rib before resecting it.

4. Resecting the ribs flush with the transverse process: If segments are left protruding beyond the transverse processes the collapse is less complete.

5. Resection of sufficient length of the ribs to secure adequate collapse: In many cases the mobility of the ribs had been so much reduced by a prolonged fibrous retraction, the ribs so thickened and changed in direction and the pleura so stiffened by a chronic pleural effusion that the resection of a relatively much larger segment is necessary for a satisfactory collapse than is necessary for an ordinary case. Generally speaking, the longer the segments removed, the better the collapse. The tendency to mediastinal flutter is rarely seen even in case very long segments are resected in the course of a three or more stage operation. This is an important advantage in the multiple stage operation.

6. The number of stages and interval between them should be according to the



Figure 11

B. T.—Photograph of the patient taken two years after completion of the operation. Patient symptom free except for dyspnoea on exertion. Gained ninety pounds.

condition of the individual patient: It seems to me wrong to try to standardize the operative procedures for the treatment of a diseased condition which is subject to such a variety of pathological changes and which gives such a wide range in the condition of the patient. To do so leads in-

evitably to a tendency to fit the patient to the operation, which is wrong in principle.

My practice has been to perform a three stage operation at intervals of a week as a routine procedure in the cases constituting the best surgical risks. In case of patients at the other extreme, concerning

as an adjunct to thoracoplasty. As such it may be used—(1). As a test operation; (2), preparatory to thoracoplasty; (3), to improve the collapse following thoracoplasty.

As a test operation it is particularly useful in detecting any tendency to respiratory incapacity of the better lung, particularly in case of patients with low vital capacity readings. One of my patients with a chronic inactive tuberculosis died of respiratory insufficiency a few days following phrenico exeresis. Preparatory to thoracoplasty the operation may be surprisingly effective. One patient who had had constant fever for a year and had been bedridden most of that period, became afebrile and almost free of cough and sputum ten days after phrenico exeresis. Another patient improved so much that thoracoplasty has so far seemed unnecessary. (Fig. 14).

It seems reasonable to assume that phrenico exeresis will result in a more complete pulmonary collapse in any case and therefore worthwhile in case of any patient in whom thoracoplasty is indicated.

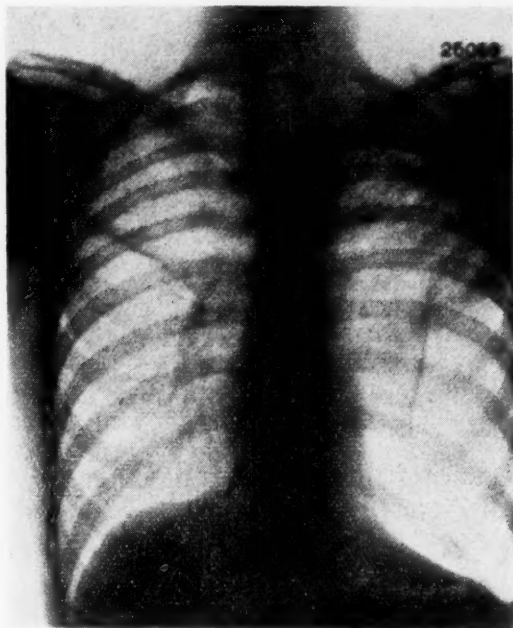


Figure 12

C. C.—Roentgenogram showing right upper lobe pulmonary tuberculosis lower lobe partially collapsed by artificial pneumothorax. Patient had been in sanitarium for five years.

whom there is considerable uncertainty, segments of two ribs are resected at the first stage and the extent of the later stages is gauged according to the patients' reaction to each preceding stage. In many of these cases it is necessary to wait two or even several weeks between stages and this may be absolutely necessary if infection develops.

7. Total costatectomy, if necessary, to effect an efficient collapse: In case of multiple stage operations, particularly if several weeks have intervened between the several stages sufficient callus and regeneration of the first resected ribs results to prevent an efficient collapse. In such cases a complete costatectomy can be performed with relative ease and safety and this procedure has always, in my experience, resulted in a degree of collapse as complete as following the most favorable one or two stage operation. In case of chronic empyema with complete collapse of the lung it is usually necessary to resect also a portion of the thickened parietal pleura over the residual cavity.

Phrenico exeresis is a useful operation



Figure 13

C. C.—Incomplete collapse of the upper portion of the lung following posterior extrapleural thoracoplasty.

It seems especially indicated in case of lesion at the base and in extreme retraction of the mediastinum.

Pneumolysis as an adjunct to thoracoplasty has a limited field of usefulness for collapse of cavities that have remained after extensive thoracoplasty. In two such

cases in my experience both with persistent hemorrhage after thoracoplasty the hemorrhage was virtually eliminated by a muscle plastic over the cavity.

During the last three and one-half years I have performed an extrapleural thoracoplasty on 68 patients with pulmonary

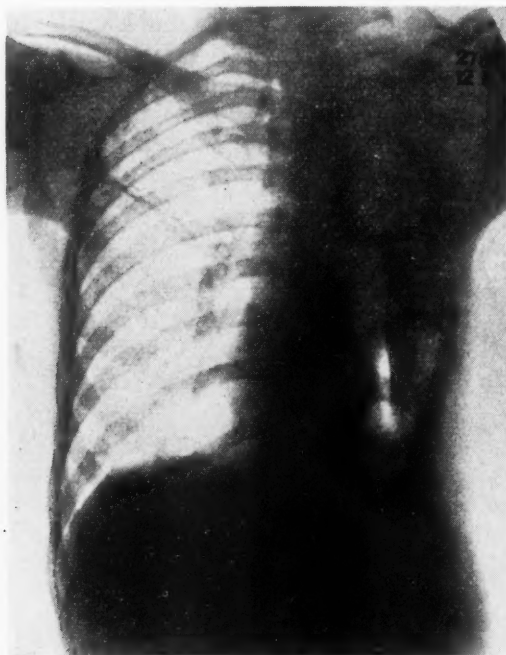


Figure 14

C. C.—Complete collapse of right lung following complete constatectomy. Patient has remained symptom free, gained forty pounds in weight and is back at work.

tuberculosis. Forty-two were males, 28 were females, 30 were between 19 and 30 years of age, 30 between 31 and 40, and 8 between 41 and 50 years of age.

The probable duration of the disease was under 1 year in 1, between 1 and 2 years in 25, 2½ to 5 years in 18, 6 to 10 years in 19, and more than 10 years in 5. Of the last 5 the probable duration was 10 years in 2, and 12, 13 and 16 years respectively in 3. From these figures it may be noted that the duration of the disease was under 2 years in about 38 per cent, and more than 2½ years in about 62 per cent.

The sputum was large in amount, varying between 6 and 12 ounces in about 25 per cent. Hemoptysis was present in some degree in half the cases. In 8 it had been profuse. Fourteen had hemoptysis without cavity signs.

Marked weight loss—30 to 60 pounds was present in 9. One patient had lost 100 pounds.

The right lung was involved in about 35 per cent, the left lung in about 65 per

cent. In these cases in which the disease could be definitely localized it was found to be in the apices, except in two cases it was localized in the right lower lobe and in three in the left lower lobe. Diffuse pleuritis and lung changes prevented localization in 6 cases in which the right lung was involved and in 16 in which the left lung was involved. Cavity signs were elicited at the apex in 24, at the base in 3, and in the middle portion of the lung in 1.

The heart was more or less displaced towards the affected side in a large proportion of the cases. In four there was a complete dextrocardia.

There were indications of involvement in the better lung in the form of rales, dullness to percussion, and increased density in the roentgenogram in 34 (50 per cent) of the cases. Such findings were localized in the upper part of the lung in 29, the middle portion in 4, and the base in 1. In one patient no evidence was found clinically, but necropsy showed a caseating tuberculosis of the better lung.

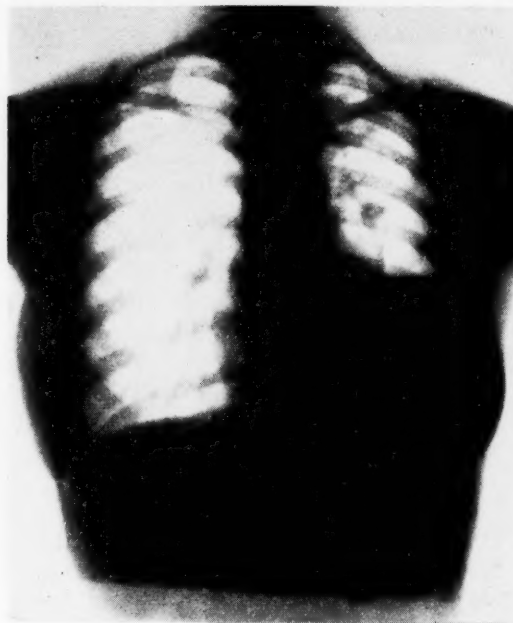


Figure 15

V. Z.—Left-sided pulmonary tuberculosis left upper lobe. Incomplete pneumothorax collapse of the lower lobe with tuberculous pyopneumothorax. Patient had been in sanitarium under treatment for two years.

An artificial pneumothorax had been attempted, but proven entirely unsuccessful in 8, an incomplete collapse was obtained in 13, and a complete collapse had been achieved at some time in the course of the illness in 18. Three of these patients presented themselves with a serous

effusion and 14 with an empyema following such pneumothorax treatment. One other patient had a serous effusion and 3 an empyema. A spontaneous pneumothorax with empyema had developed in 1. In 8 of the empyema cases drainage for the residual empyema had been instituted.

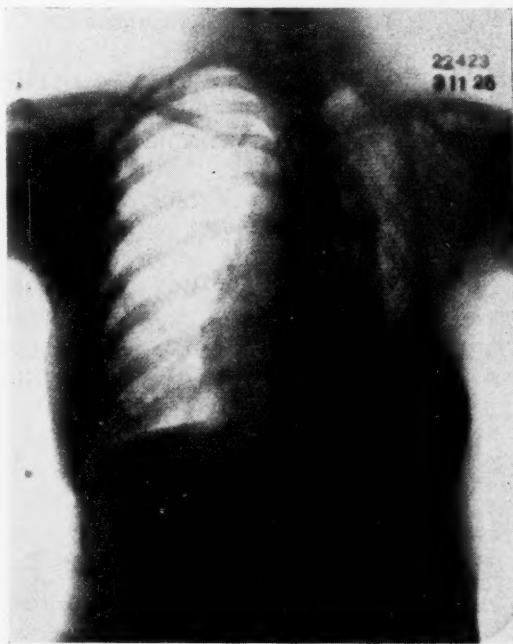


Figure 16

V. Z.—Roentgenogram following completion of posterior thoracoplasty.

A phrenico exeresis was performed preliminary to thoracoplasty in 28. Seven of these showed remarkable improvement in the course of a month following this operation. One patient who had been bedridden and continuously febrile for a year, became afebrile in 10 days. Six months after the thoracoplasty she is symptomatically entirely well and has gained 40 pounds. Another patient improved so much following preliminary phrenico exeresis that a thoracoplasty did not seem indicated. (Fig. 14).

A typical posterior thoracoplasty was performed in two stages in case of five patients, in three stages in forty-eight, in four stages in nine, in five stages in one, and in seven stages in one. The collapse was insufficient in twelve patients, in some because of a large pneumothorax or empyema cavity, in others because of a persistent uncollapsed pulmonary cavity, with much cough and sputum or hemorrhage. A complete extrapleural costatectomy was performed in these in cases in two stages in seven, in three stages in three, in four stages in one, in five stages in 1. The collapse following this second

dary complete costatectomy was as complete as following the most successful result of posterior thoracoplasty. (Fig. 6, 10, 13).

Shock followed in spite of a several stage posterior thoracoplasty in 13 patients. In case of several of these the operation involved the resection of only two or three ribs.

Wound infection developed after one or another stage in 12 patients. One patient nearly died from it. In several the further stages were delayed to such an extent as to make the ultimate degree of collapse less complete than it would otherwise have been. One developed a persistent osteomyelitis following the wound infection. During the last year, after the use of a buried drain, removed in about 48 hours, there has been no frank purulent infection.

Other complications were hemorrhage into the pleural cavity in one, and hemoptysis in one, pleural effusion in one, dyspnoea in five, symptoms suggesting a pneumonia in the opposite lung in four, of a pulmonary abscess in one, a pleural effu-



Figure 17

V. Z.—Photograph showing line of incision—three stage operation. Note relatively small degree of deformity.

sion in the operated side in one, and sputum of a pre-existing sterile tuberculosis empyema in one.

There were three deaths within three weeks following operation, giving an operative mortality of 4.4 per cent by patients and 1.3 per cent by operation. One died

suddenly the second day after a fourth stage operation following sudden onset of dyspnoea and cyanosis, one on the third day after a second stage operation following a perforation into the bronchial tract of a sterile tuberculous empyema. Necropsies were not allowed in either of them.

The third patient died after the first stage resection of two ribs. Necropsy revealed a caseating process in the opposite lung and a tuberculosis peritonitis. A loss of weight of 100 pounds, marked weakness and a progressive downward course should have been sufficient to preclude operation in this case, even though the secondary lesions were overlooked, but it should be emphasized that at least a third of the total series of patients were relatively poor risks even for a several stage operation, and some of the most gratifying results

were obtained in case of some such patients.

The total number of deaths from the time of operation to the present, including the above three, is 6, or 8.8 per cent. One patient who died from an automobile accident a year after operation, and who had been practically symptom free up to the time of the accident, is not included in this mortality series.

Of the 60 who survive, 2 were not improved. All the remaining were improved in varying degree approximating a complete symptomatic cure. Many of them have returned to their former occupations and are living normal lives. Of 21 of these patients, operated upon during 1925 and 1926, all are living, none have any symptoms of an active tuberculosis. Fourteen of them have resumed their former occupations.

PROF. CLEMENS FREIHERR VON PIRQUET

Professor Clemens Freiherr von Pirquet died in Vienna on February 28th, 1929. By his death the University of Vienna has lost a distinguished professor and a rare personality, remarkable for his catholicity of interests and sympathy which knew no barriers of race, religion or nationality.

He was born in 1874 of a noble family, and his early education was originally destined to fit him for the church. This plan, however, was abandoned. Later on he graduated in medicine at the University of Vienna and shortly afterwards became assistant to Professor Theodor Escherich, then director of the Vienna Kinderklinik. His early scientific work was devoted chiefly to bacteriology and immunity and during this period he made important researches on serum sickness and on the immunological reactions following infection with tuberculosis. These studies led to the publication in 1907 of the skin test for the diagnosis of tuberculosis which bears his name. The analogous work on diphtheria carried out by his colleague and famous pupil, Schick, owed much to von Pirquet's teaching and example. In 1908 von Pirquet accepted an invitation to the Chair of Pediatrics in Baltimore. Here he remained only for about eighteen months when he returned to Austria and accepted a position in Breslau. This he resigned in 1911 to become successor to his old chief, Theodor Escherich, as

Director of the Kinderklinik in Vienna. The magnificent Universität Kinderklinik was just completed when von Pirquet took up his new duties there. It would be hard to find an institution where research was combined so perfectly with care for the welfare and happiness of the sick children and with an affectionate consideration for the medical and nursing staff in every ward. It has been said that von Pirquet transformed the ward maids into nursing sisters, and many of the latter into scientific colleagues who enabled him to carry on a most important series of investigations upon human nutrition. His researches upon the nutritive requirements of the superintendent in providing the surgeon with a drug whose purity he cannot himself safeguard. Even with such precautions, however, hospital superintendents should be careful not to store ether for too long a period, and above all should make sure that no ether be used for anaesthesia whose container has been opened for more than twenty-four hours. It is generally agreed that the passing of ether gas through water removes the impurities mentioned, but this procedure should not be substituted for efforts to secure the drug free of these harmful substances, not only at the time of manufacture, but after varying periods of storage.—*Canadian Medical Association Journal*.

FIND HOME-MADE LIVER EXTRACT EFFECTIVE AS ANEMIA CURE

A liver extract that will be effective in treating pernicious anemia can be made at home with very little effort, Dr. William B. Castle and Morris A. Bowie of Harvard University Medical school have reported to the American Medical Association. This will prove a great boon to sufferers from this disease who are unable to afford the high price of the commercial liver extracts or of the more palatable calves' liver. Eating half a pound of beef liver a day soon becomes a tiresome ordeal, yet this has been the only chance for life and health for many of the poor who suffer from pernicious anemia. The domestic extract is as effective as the commercial ones and may be made in the ordinary kitchen by any reasonably intelligent person, the Harvard scientists

declared. Only the usual domestic utensils are needed. The cost of the beef liver is practically the only cost. The extract is palatable and may be drunk hot or cold, with or without salt. It is said to taste something like beef broth.

The process of making it consists, in general, of grinding the liver, soaking it in cold water, straining, heating and restraining. The ordinary meat grinder, strainer, enamel pots, glass jars and jelly bags found in most kitchens are the only utensils required. The success of the procedure depends on the care and exactness with which the directions for the various steps in the process are followed. Dr. Castle and Mr. Bowie gave these in detail in their report.—*Science Service*.

MALPOSITIONS OF THE PELVIC ORGANS*

EMIL D. ROTHMAN, M. D.**

DETROIT, MICHIGAN

I—INTRODUCTION

Variations from the normal ideal anatomical position of the pelvic organs are among the most frequent findings in gynecological examinations. An attempt will be made in this paper to explain the mechanics of this condition, an understanding of which is essential to intelligent therapy.

The uterus lies between the bladder and rectum and any change in its position will produce more or less malposition of the other two organs. Hence, except for general remarks, I shall consider the uterine malpositions only.

II—CONGENITAL MALPOSITIONS

Changes in uterine position may be either congenital or acquired. About 20 per cent of all gynecological cases show a retroversion of the uterus. A large number of these are seen in normal women—nulliparous, without any previous inflammatory condition—and these will be found symptomless and correction of the malposition with a pessary will not alleviate the symptoms occasionally found. These are entirely an orthopedic problem.

This type of malposition must be recognized as not merely confined to the uterus, but also to the entire pelvis and its contents. These patients present a complete skeletal change, which Dickinson and Truslow (Jour. A. M. A. 1912, vol. lix.) call the "gorilla type". "The pelvis is rotated backward and downward, the plane of its inlet making with the horizon and angle more acute than normal."

In normal pelves, the axes of the abdominal and pelvic cavities form a 60-65 degree angle.

In this type the center of gravity passes through the important pivotal points, the pelvis is balanced in equilibrium on the heads of the femurs, and there is an absence of muscular and ligamentous strain due to the perfect equilibrium. The rear perpendicular touches the middle of the back and the buttocks.

Here we see the two general types of deviation from this normal. A is the so-called kangaroo type of posture. The pivotal structures of the trunk are anterior to the line of gravity and those of the lower extremity posterior. The pelvis is rotated forward-downward, its angle with the vertical being more obtuse than normal

—about 75 degrees. The lumbar curve is accentuated, the trunk being carried forward, a strain is placed on the spinal and pelvo-spinal ligaments and muscles and tends toward anterodeviation of the ab-

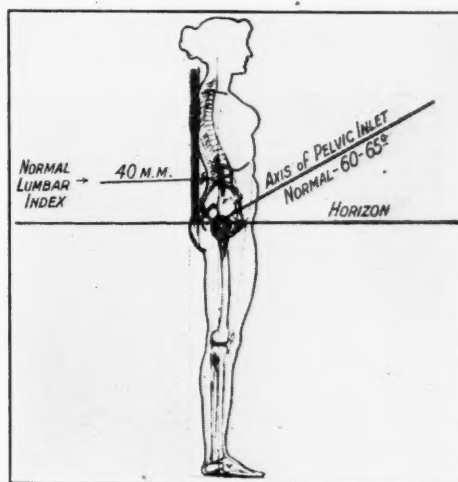


Figure 1

Normal type of posture. (From Dickinson and Truslow).

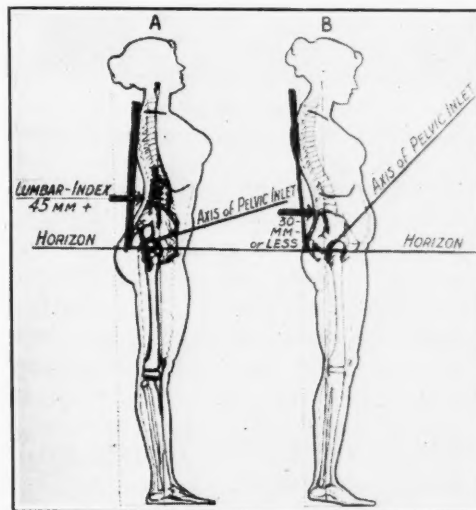


Figure 2

A—Kangaroo type of posture.

B—Gorilla type of posture.

Wavy lines indicate relaxed muscles, dotted lines contracted muscles. (From Dickinson and Truslow).

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** Dr. Emil D. Rothman is a graduate of the Detroit College of Medicine and Surgery, 1921. He worked in New York City Hospital under the late Dr. Chas. G. Child, Jr., and was associated for five years with Dr. B. Friedlaender of Detroit, an dis now confining his time to gynecology.

dominal and pelvic viscera. The anterior muscles of the thighs are relaxed as are also the muscles of the back, while the abdominal muscles and those on the rear of the thighs are contracted.

B shows the gorilla type. The sacro-lumbar angle is flattened, and the axis of the pelvis more nearly approaches the vertical, the angle being about 45 degrees. The pivotal structures of the trunk are behind, and those of the legs are in front of the line of gravity, the patient appearing to slouch. The pelvis is rotated backward-downward and again there is a strain on the ligaments and muscles of the spine and pelvis. The abdominal and pelvic organs have a tendency toward retrodisplacement. The muscles of the abdomen and back of the thighs are relaxed, those of the back and front of the thighs contracted. The chest is sunken and the abdomen protrudes.



Figure 3
Measurement of lumbar index. (From Sturmdorf).

These are, then, the three common types met with. Careful study has shown that in the gorilla type a retroversion may be expected in almost all cases. Sturmdorf has used this study for a determination before vaginal examination of the normal uterine position in the patient observed.

The patient stands in her normal standing position, with the back exposed. A ruler is held vertically in contact with the most prominent curve. With a millimeter rule the distance from the deepest point of this hollow to the edge of the vertical ruler is taken, and the number of millimeters is the index for the patient.

Sturmdorf found this index to vary from

12 to 45 mm. An index over 45 mm. indicates a pathological lordosis and is, of course, of obstetrical rather than gynecological importance. Forty mm. may be considered the normal index, with a minimum of 30. Below 25 mm. indicates a gorilla type and retroversion is the normal position of the uterus in such cases.

In the absence of inflammation, a congenitally retroverted uterus will resume its state of retroversion after delivery.

As the gorilla type is quite a common finding, it can be observed that about 50 per cent of retroversions are in women of this type, and must, therefore, be considered congenital.

The exceptions found to this rule can be explained by deformities of the pelvis only, such as high sacral promontory, or a recession of the pubes or by a strained position of the patient during measurement. Also, some of this type have acquired anteversions from some pathological condition.

Attempts at restoration of the uterine position in these cases, or of the treatment of the symptoms produced, is entirely orthopedic, rather than gynecological.

III—ANATOMY OF THE PELVIS

Support of the pelvic organs depends principally upon the pelvic diaphragm, together with ligaments and smaller fasciae for each organ.

The phases of human life constitute a motor and muscle covered by two fascial sheaths, the retro-vesical and the anal, or levator. This is the important structure in pelvic support. The levator arises from the posterior surface of the pubis anteriorly, from the ischial spine posteriorly, and between these from the white line that marks the division of the pelvic fascia. The



Figure 4
Origin of Pubo-coccygeus.

S—Symphysis. U—Urethra. V—Vagina. P—Perineum.
1—Pubovesical ligament. 2—Origin of pubococcygeus. 3—Iliococcygeus. 4—Internal pudic vessels. 5—Urethral plexus. 6—Upper surface of pelvic diaphragm. Pubococcygeal loops of the levator ani. (From Sturmdorf).

muscle is, in reality, divided into three parts: the posterior portion or iliococcygeus; the upper anterior, or pubococcygeus, and the lower or superficial anterior called the puborectalis. The iliococcygeus is very thin and is almost functionless. The others are strong, powerful bands.

The pubococcygeus arises from the pubis and white line and is inserted into the median raphe, while the puborectalis arises from the pubis and inserts into the rectum.

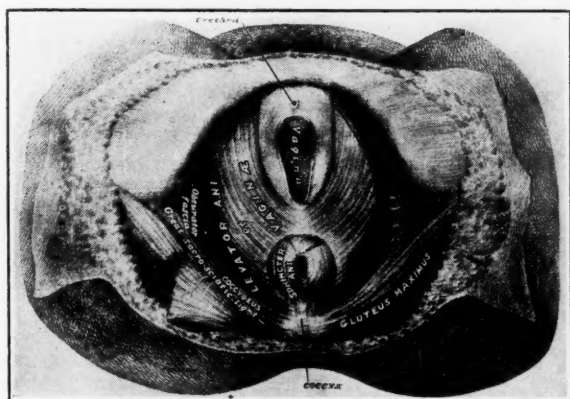


Figure 5

Anatomy of the female perineum. Exposal of the levator ani muscle after removal of the levator fascia.

All three bands on either side merge together at the median raphe, surrounding the vagina and anus in separate loops. The muscles with the two fascias hold the lower vagina and rectum close to the symphysis pubis and form a sling which closes the pelvic outlet and supports the organs above. The median borders, which can be felt through the lateral vaginal walls, form a V-shaped interspace which encloses the introitus under the pubic arch and is called the levator cleft.

As has been stated, the rectovesical and levator fascias meet at the white line where they continue as the pelvic fascia, which in turn continues as the transversalis fascia. Medially the fascias fuse at the levator cleft. Caudad to the levator fascia and anterior to the anus is the triangular ligament enveloping the deep transverse perinei muscles. Superficial to this ligament are the superficial transverse perinei muscles and the smaller perineal muscles, covered by the superficial perineal fascia.

This structural arrangement is significant in pelvic repair, as all these muscles, with the exception of the levator ani are unimportant for support of the pelvic contents, and perineorrhaphy, to be successful, must unite the levators themselves.

IV—BIRTH INJURIES

During labor, the descending head stretches the muscular sling about the vagina, between it and the rectum posteriorly and bladder anteriorly, producing small or extensive lacerations within the muscles themselves. This occurs regardless of the presence or absence of visible or external lacerations. As healing takes place, scar tissue forms within the muscle bodies, and lack of the normal tone ensues, so that the sling about the vagina becomes slack. There is also a median separation of the two levators, approximating more or less the vagina and rectum, and bringing the bladder down from its normal position in relation to the fundus.

With this relaxation, intra-abdominal pressure tends to push the pelvic organs out through the vaginal expulsive plane and rectocele, cystocele, retroversion and descensus result.

V—INTRA-ABDOMINAL PRESSURE

Let us now consider the mechanism of intra-abdominal pressure and its role in the production of malpositions.

Intra-abdominal or intra-peritoneal pressure depends upon atmospheric pressure, gravity, the pressure of the contents of the viscera and the contraction of the abdominal and perineal muscles. Atmospheric pressure and gravity are, of course, constant, but the intravisceral pressure and muscular contraction are variable and constantly modify the intensity of intra-abdominal pressure.

By intravisceral pressure we mean the increased pressure due to a full stomach, bladder or other viscus. Muscular contraction includes not only the motion of the abdominal and perineal muscles, but also of the diaphragm. By this mechanism it can be seen that each body motion and even each breath or heart beat modifies intra-abdominal pressure. Each increase in this pressure has a natural tendency to extrude the pelvic viscera in the direction of least resistance. It would seem, therefore, that prolapse of the rectum, uterus, and bladder should be more common than is actually so. Another mechanism must be explained which counteracts this force.

Pressure directed against a resistant plane is deflected in a definite direction depending upon the angle of the plane. It is thus that gravity is conquered by the wings of an aeroplane, or the direction of the current is shifted by the rudder of a boat. As a result of this deflection by the pelvic and abdominal organs, the force of

gravity and intra-abdominal pressure is so reduced that a pressure of 80 mm. in the abdomen is only 60 mm. at the cervix, 40 mm. in the vagina, and 20 mm. at the entrance.

The entire abdominal cavity consists of a compound deflecting chamber of multiple planes, some fixed and some mobile, which deflect pressure at varying angles to each other.

The bony framework of the pelvis presents fixed planes which tend to deflect pressure in the line of the axis of the pelvic outlet. They may be considered expulsive planes. Any viscus which falls into the line of this plane will prolapse. The uterus, bladder and broad ligaments tend to deflect away from this expulsive plane and are therefore retentive planes. In the same way the surfaces of the intestines and mesentery deflect pressure from the vertical, reducing it as it centers upon the pelvis.

The true vertical in an erect abdomen comes in contact with the anterior aspect of the lumbo-sacral angle and impinges upon the posterior surface of the symphysis. It thus strikes the posterior surface of the normally anteverted uterus. This

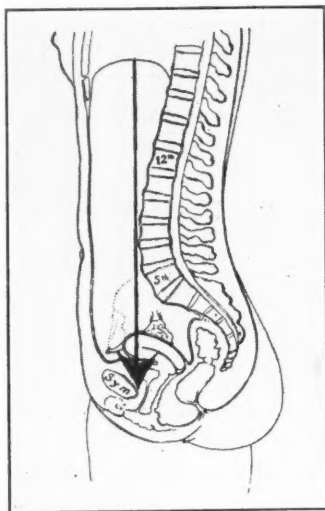


Figure 6

The vertical line represents the initial direction of intra-abdominal pressure at the pelvic brim. (From Sturmdorf).

vertical is thus anterior to the fulcrum of the uterus, and anterior to the true pelvis. The pelvic cavity is thus a separate hollow in the posterior abdominal wall, whose roof is the sacrum from which the uterus is suspended by the sacro-uterine ligaments. The posterior pelvic wall is higher than the anterior (the symphysis) usually about $3\frac{1}{2}$ inches. The intra-abdominal pressure is directed upon the uterine fundus which lies upon the bladder and pubis.

The uterus is lever-like, supported at its fulcrum by the pubococcygeal segments of the levator ani and their fasciae. The cervix is the short arm of the lever and the fundus the long, intra-abdominal arm. The fundus is limited in its mobility posteriorly by the round ligaments and anteriorly by the bladder and pubis.

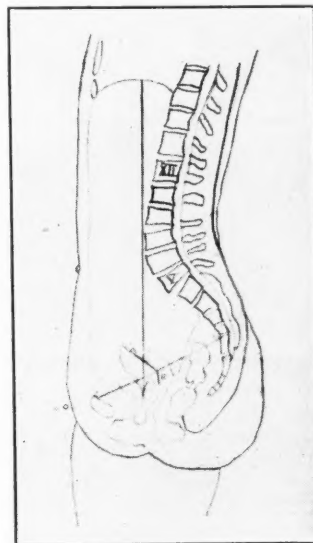


Figure 7

Showing the effect of intra-abdominal pressure in elevating the cervical arm of the lever after complete depression of the long uterine arm.

The vertical falls upon the uterine fundus and intra-abdominal pressure depresses this long arm until its motion is stopped by the bladder and pubis. The pressure then acts upon the cervix, or short arm of the lever, depressing it and tending to retrovert the fundus and push it into the sacral expulsive plane. However, the lowering of the cervix produces a contraction of the levator ani which tends in contraction to elevate the level of the pelvic floor. This raises the fulcrum and consequently the cervix, until it is again on a level with the fundus, restoring the normal anteversion.

At the same time the utero-vaginal angle is made more acute, the vagina is correspondingly narrowed and the pelvic outlet closed. Every increase in pressure is thus counteracted by an increased contraction of the levator ani and pelvic stability is maintained.

In other words, the levator ani diminishes the force of intra-abdominal pressure upon the pelvic organs by deflecting its direction, and obstructs the pelvic outlet by compressing the vaginal canal. It is thus antagonistic to the abdominal muscles and diaphragm, contracting when they contract and vice versa.

VI—DESCENSUS

As has been said, the descent of the head down the birth canal tears or stretches the levators and this normal mechanism is interfered with. The contraction of the levators fails to occur and there is no compensation for the displacement which is normally the result of vertical pressure alone. Retroversion of the uterus occurs and the uterus is not restored to normal as described above, but is pushed into the sacral expulsive plane and prolapse may eventually occur.

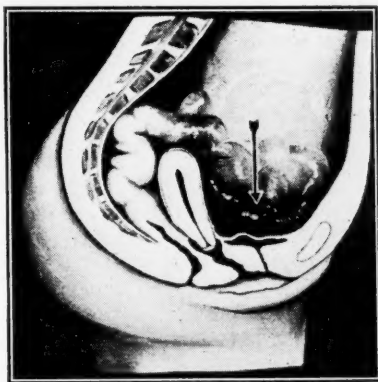


Figure 8

Diagrammatic scheme of misdirected pressure deflection by deranged intrapelvic planes, due to incompetent levator contraction resulting from perineal injury. This is the first stage in the development of cystocele and prolapse. Note the line of pressure on the bladder instead of the fundus. (From Sturmdorf).

It will be seen from this diagram how the uterus is directed down the pelvic canal and how pressure is directed upon the bladder, producing a cystocele. Retroversion is, therefore, the first stage of prolapse. The varying degrees of prolapse seen are simply advanced stages of this mechanism, where there is more relaxation of the pelvic floor, or where this has been of longer duration.

VII—TREATMENT

Treatment for pelvic malpositions is entirely surgical, and operation must be done on the basis of the physiological and anatomical principles I have outlined. Since normal uterine position depends on intra-abdominal pressure, which is modified by proper position of the levator ani muscles, any operation for the re-establishment of this position must of necessity restore the levators to their normal condition.

If fixed malpositions are present, laparotomy must be done to separate the adhesions and free the uterus. Suspensions are, as a rule, of no use at all except occasionally a shortening of the round ligaments to limit posterior motion of the uterus. All

successful work of this nature must include a plastic operation on the levators. We use Sturmdorf's levator myorrhaphy which brings together the entire mid portions of the levators without constricting them. Many perineorrhaphies unite merely the transverse perinei or a few levator fibres.

Cystocele, rectocele and prolapse must be treated similarly. After any plastic operation for cystocele perineorrhaphy is essential. Perineorrhaphy alone will cure rectocele. For prolapse we employ Watkin's interposition operation which changes the relationship of the uterus and bladder with very little change in the deflecting mechanism. Perineorrhaphy is always done after this operation.

VIII—CONCLUSIONS

I have attempted to show in this paper the dynamics of malposition. It is seen that normal uterine position depends upon a normal intra-abdominal pressure, which is maintained by normal levator ani muscles. All attempts at restoration of normal uterine position must bear in mind these points and should attempt to restore the levators.

This work is not offered as original. Its principal arguments were propounded originally by Dr. Arnold Sturmdorf of New York, whom I thank very much for stimulating this concise and brilliant line of reasoning as an explanation for these frequent and annoying conditions.

DISCUSSION

Dr. Reuben Peterson (Ann Arbor): I consider this a very fine exposition of this subject. The trouble with the ordinary practitioner, is that if you speak of dynamics it gives him the same helpless feeling one has when one speaks of kilowatts. If I think my electric light bill is too high I make a kick. If the person I am talking to mentions kilowatts I say "A check will follow immediately."

That is why I say this paper is such an excellent one. It gave in simple language something we should recognize in our treatment of pelvic displacements.

Some six or eight years ago I realized that many of our patients operated upon for retrodisplacement were not improved. I consulted not a gynecologist but an orthopedist. He was an old classmate of mine, Goldwaite of Boston. I sent one of my assistants to Goldwaite's clinic. He spent three weeks there studying the dynamics of the pelvis and other organs so that we might distinguish what patients with retrodisplacement should be operated upon. We recognize for the first time practically—although it had been brought out by Dickinson many years before—the kangaroo type and the gorilla type

of posture, and we sent these patients to the orthopedist.

With all due respect to my orthopedic confreres—and I think a lot of them—we have not gotten as good results as we wanted to. I have come to the conclusion that we shall have to do this work in our gynecologic clinic. They do not recognize what we want to bring about.

A woman, for instance, with a gorilla type of posture, whether she has had children or whether she is nullipara, does not only need a support and belt, but a course of training of those muscles and a change of the whole skeleton to give her relief from backache due to this condition. It is not due to the retroverted uterus.

We recognized quite a good many years ago that we were not getting the right results from our prolapse and perineal operations. I think a great deal of credit should be given to Sturmdorf and others who showed us exactly what to do under these conditions.

When the woman has sustained a laceration in childbirth the levator ani muscles are ruptured and drawn to one side or both sides of the pelvis. They and the pelvic fascia must be brought together in the median line if you are going to get the right results.

That is why for many years I have been very favorably disposed towards the interposition operation for the very reason that you saw in the lantern slides that when the fundus is tipped forward inter-abdominal pressure acts in such a way that the lesion does not recur. You older men will remember what happened when the uterus was attached to the abdominal wall without the repair of the pelvic structures. Sometimes a man will say, "I hitched up the uterus to the abdominal wall but the cervix came out again."

Of course it would come out again because nothing can stand that strain of the inter-abdominal pressure and it will be forced out unless the fundus point forward. I have seen the cervix six inches long protruding from the vagina after fixation of the uterus. If the uterus had been tipped forward and the perineal muscles had been built up all would have been well.

The principal value of a paper like this is to draw again and again the attention of the profession to the fact that retrodisplacement, in itself means nothing, but that you should seek along gynecologic and orthopedic lines to restore many of these women to health.

Dr. Robert T. Morris (New York): I will try to make six points. I agree with Dr. Rothman that classification of malposition into those that are fixed and those that are movable is fundamental to the proper analysis of the situation.

Next, in discussing the question of the gorilla and kangaroo types of skeletal defects, we must take into account also that described as a short sternum. A short sternum is several centimeters shorter than the normal one and it is important because of its significance as a matter of physical decline.

When you have this short sternum you have an increase of parallelogram forces set into the pelvis because of relaxation of perineal supports. The colon pulls upon the gastrocolic ligament and drags the right side out of the Gerota's capsule. The left kidney may be pulled out by a traction upon the splenophrenic ligament. In other words, you are dealing with a physical condition, fundamental in its nature, relating to physical decline, and that is your picture. You are not dealing with a picture of the uterus. That is way past the middle ground, in the background, not even in the foreground. In addition to that we have to consider such matters as scoliosis, such matters as peripheral irritations, like eyestrain in school children, nasal hypertrophy, and other peripheral irritations which lead to relaxation of normal supports.

The treatment for pelvic malpositions, as I understood Dr. Rothman, is almost wholly surgical. I presume by that he means fixed malpositions. With that I will agree. I believe the other malpositions are almost wholly medical. They relate to the general condition of the individual.

In regard to perineal repair it is true that many of the earlier operations merely united the transversus perinei muscle. I have taught my classes for years that they must carry their scissors deep enough so that when they are spread we expose the pubococcygeal part of the levators and then repair the fascia in such a way that the transverse perineal muscles are brought together.

REPLY TO DISCUSSION

Dr. Emil D. Rothman (Detroit): One of our very prominent gynecologists in Detroit told me a short time ago that the merits of a paper do not depend so much upon the paper itself as upon the men who discuss the paper. From that point of view, I feel confident that this little attempt of mine has certainly been successful.

HAY FEVER SEASON OPENS, TIME FOR TREATMENTS

Little grains of pollen blown on an April breeze may be the innocent cause of many sneezes from early hay fever sufferers. The season for this trying malady is now at hand and, in the opinion of medical specialists, hay fever victims should arrange to be desensitized without delay.

While pollen from summer and fall grasses and weeds causes most of the hay fever, there is an early variety due to certain trees and shrubs that blossom early. In warm climates this may be mistaken for a common cold of late winter. Rose fever is one name given to this early variety of the malady, though it is caused by many plants besides roses.

As a matter of fact, it is a protein substance in the pollen of plants that causes hay fever. Some persons get it from protein in foods, animal

hair or feathers, glue, horn rimmed glasses, and many other queer and unexpected sources. Physicians have devised a way of testing which pollen or protein is the cause of hay fever in any given person. Treatment to make the person less sensitive to the guilty substance may then be instituted. An amount of the particular protein so small that it will not cause a reaction is injected under the skin of the patient. This is done about once a week, gradually increasing the amount of protein injected, until the test shows that the patient no longer has any reaction to it.

Treatment is generally started about fifteen or sixteen weeks before the time the hay fever customarily begins. It will not help all the sufferers, but 25 per cent can be completely relieved by desensitization and a varying number can be definitely benefited.—Science Service.

FORCEPS AND VERSION IN THE MANAGEMENT OF DYSTOCIA*

HARRY A. PEARSE, A. B., M. D., C. M.**

DETROIT, MICHIGAN

In this paper, by the operation version is meant, internal podalic version followed by extraction of the foetus. The term "forceps" refers to the obstetrical instrument designed to extract the foetus by the head from the maternal passages, as Chamberlin, its inventor said, "without prejudice to the mother or the child."

There has been considerable comment in the literature of the last decade regarding the radical trend of obstetrics. The operations of forceps and podalic version have had their ardent supporters and severe critics. It has not been firmly enough impressed on medical students and the younger generation of practitioners that these are technical surgical procedures which require much more skill than the average laparotomy. Moreover, mistakes in their performance jeopardizes the lives of two individuals instead of one. Forceps have suffered more in this respect than version, for it is not uncommon to see an individual who shuns a version attempt all sorts of bizarre procedures with forceps. On the other hand, there is also danger in going to the opposite extreme of conservatism. As Barnes said, quoted by DeLee, we should wait to see what the woman can accomplish, not what she can endure. Undoubtedly many labors are prolonged by several hours while indications exist for their termination. These same labors eventuate spontaneously without mortality to mother or child, but rarely without morbidity. Too much emphasis in the past has been placed on mortality and not enough said about morbidity. How often do we hear the statement,—I was very healthy until my baby was born. The nervous system may be permanently damaged. The severe acidosis with the attendant surgical shock and anemia occasioned by long labor is not to be too lightly considered.

A thesis on maternal and foetal mortality and morbidity by Dr. Irving Colef, a junior in the Detroit Medical College, reveals the status of the physician in the opinions of DeLee, Lynch, Polak, Ehrenfest, Dickinson, Hirst, Frank and others, to whom a questionnaire was sent. They were asked to list several pathological and non-pathological factors in their order of importance by numbers. Among the non-pathological factors were, the physician, the lack of pre- and post-natal care,

parity, age and health of the parents. I have several of these communications and some of the authorities, notably Polak, not only numbered the factors but placed especial emphasis on the physician.

The country doctor is not so apt to err in this regard as his city confrere who has his patient hospitalized. The hospital atmosphere with many assistants and adequate supplies gives the latter a false sense of security and he is seized with a desire to interfere when the conditions do not warrant it. The presence of resulting complications only serves to augment his frenzy and injury to mother and child results. In other instances, he calls a consultant to carry out an operative procedure, for which the patient and relatives have been prepared, when expectancy is the treatment.

As indicated before, the operative intervention attempted in the past has usually been with forceps. During the last few years version has been popularized and much glamor added to its performance mainly through the efforts of Dr. Irving Potter of Buffalo. His contribution has been mainly in calling to attention the advantages of version, an operation which was rapidly falling into disuse. The principles stressed are in the main not new, for this operation was successfully performed by Celsus, about the time of Christ, and later by Soranus and others. The majority of Potter's versions are done on patients who would have a spontaneous birth if unmolested and hence should offer little difficulty to one so skilled in its technic. His teaching, however, is unscientific, dangerous and cannot be too widely condemned.

Both forceps and version have their indications and limitations. Our judgment in their choice will produce the best results when all factors in the case are carefully weighed in the light of former experience and one procedure is adopted to the exclusion of the other. Most versions

* This paper was presented to the Section on Gynecology and Obstetrics at the Annual Meeting of the Michigan State Medical Society held in Detroit, Thursday, Sept. 27, 1928.

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come to grief because of the mistaken idea that it is a complementary operation in forceps failure.

Broadly speaking, these two procedures are employed to relieve dystocia in mild disproportion, the true conjugate never less than 8 cm. in a flat pelvis and 9 cm. in a generally contracted. However, Boeninghausen, in a large series of cases, reports a mortality of 2.2% in generally contracted and 2.7% in flat rachitic pelves that terminated by spontaneous delivery; in contrast to 41% and 47%, respectively, where interference was instituted. In addition, these operations are our means of hastening and assisting delivery in the interests of the mother and child, and in cases of malposition.

Like other surgical procedures the patient must be properly prepared, more so in this instance because the woman is usually exhausted from long labor and has developed a moderately severe acidosis as proved by Williamson. The operating room, likewise, should be prepared for every emergency that might arise. Too often, in obstetric departments, long delays are occasioned by lack of adequate and systematic preparations with resulting detriment to mother and baby. In this regard, the posture of the patient is important, an exaggerated lithotomy for outlet work and the Walcher position for versions.

The exposure for operation with regard to the vagina is best obtained by episiotomy. The ironing out of the vagina with green soap, in the next generation, will be considered bad obstetric practice and should be now. It is no more permissible than to iron a three-inch midline incision to make room for a hysterectomy; in fact, there is less danger in the latter instance. In 1925 I took 20 routine primipara with anterior positions and alternately did an early episiotomy or ironed out the perineum. The ironing process will prevent visible laceration but a pelvic examination at three months postpartum revealed relaxation of the outlet of varying degree in the ironed cases while the episiotomy cases looked like nullipara. My associate, Dr. Henderson, predicted this result before I began the investigation.

The other factor which causes unhappy version and forceps results is the partially or undilated cervix. The term "dilatable" as applied to the cervix conveys a wrong impression. I do not believe a cervix has ever been completely dilated by manual methods, not even by Harris himself. It

frequently is lacerated, however, even in spontaneous deliveries. Much damage is occasioned the mother with an undilated cervix in forceps operations. In version it is the commonest factor causing extension of the arms and difficulty with the after coming head.

The indications for forceps are usually a secondary uterine inertia, occipito-posterior positions and contractions of the outlet. The indications for a low forceps operation need not be as rigid as those for a midforceps. Much confusion exists as to what constitutes low and midforceps. Recently, I interrogated internes from different universities on this subject. I found one, a man from the University of Michigan, who shared my views in this regard. A low forceps operation is one where a pelvic and cephalic application are made at the same time; in other words, internal rotation is complete or nearly so, the sagittal suture lying in the antero-posterior diameter. The station of the head is a bad indicator because this act of rotation does not always occur at the same station. A midforceps is where internal rotation is incomplete. A more scientific designation would be, to say a low or midforceps operation was performed at 2 or 3 cms above or below the spines. The high or inlet forceps operation is rapidly becoming a matter of history and deservedly so. Bailey, in a recent article, states, "that after long labor a version was done with satisfactory results," and says further, "a high forceps would be a better procedure and in the event of failure one could resort to craniotomy." In my opinion, that is a mistaken view, because if a primary version is attempted in such cases, in our experience, it is usually conducive of a good result. The after coming head accommodates itself better than the oncoming head. One cannot be an extremist altogether, however, for in skilled hands there may be occasional indication for high forceps operation.

The mechanism of labor as written in our texts may not be absolutely correct. McNally, in the September Journal of Obstetrics and Gynecology, observes that every head in the cavity of the pelvis lies with the sagittal suture transversely, whether originally anterior or posterior. The anteriors rotate backward, and the posteriors forward, because this is the plane of equal dimensions; they resume their former positions when striking the pelvic floor. Hence, descent and not rotation, is the prime factor concerned, which

will explain the efficacy of the Kielland forceps in transverse arrest. A cephalic application is made surprisingly easy with this instrument.

The instruments in popular use at present are the Simpson forceps modified, Tarnier's axis traction, introduced in 1877, and Kielland's forceps, introduced in 1915. These instruments all have long handles. Tarnier, by use of axis traction rods with a horizontal bar, made it possible to pull with one hand and place counter pressure against the patient with the other. If this bar is held 1 cm. from the forcep handles and traction exerted, the head follows the pelvic axis. This forceps is strongly advocated by Williams and others; personally, I never use it. It is too heavy, and there are too many rods and appliances to adjust, making it an awkward and clumsy instrument. Furthermore, it has a vicious cephalic curve. In forceps, as in version, it is the operator that is the important factor, armed with the correct diagnosis and knowledge of the mechanism of labor. The Simpson forcep, as modified by DeLee, should serve any obstetrician well. In 1915 Kielland of Norway, gave us an instrument with a sliding lock and practically no pelvic curve. Its principles are not new, but it has a place in our armamentarium. This invention upsets many cherished ideas; a high application is always made in the transverse diameter of the pelvis. It is used as a rotator and the anterior blade is inserted upside down under the pubic arch and then rotated into place. The sliding lock makes a correct cephalic application easy. I have only used the instrument a few times, as I prefer manual rotation in cases of transverse arrest. A detailed account of this forceps by Jarcho will be found in the *American Journal of Obstetrics*, Vol. X, page 1.

For unrotated occipit posterior cases, many men still employ the Scanzoni operation. Other men feel they are more proficient with the Bill manoeuvre. Tarnier first described this method of rotation, allowing the handles to pass through a wide arc, which necessitates the tips of the blades performing a circumscribed rotating movement. Bill of Cleveland, has modified this procedure by dislodging the foetal head, pushing it up out of the pelvis and then rotating. These methods, as Bill's, and manual rotation, followed by midforceps, are equal in value. It is largely the procedure the particular obstetrician is

most proficient with that should determine his choice.

The application of the blades varies in different countries. In Edinboro, the blades are both passed over the palm of the left hand, to fit the concavity of the sacrum and then rotated into place. In this country, the left blade is applied to the foetal head, the right to the pelvis, and then rotated to lock with the left. In cases of transverse arrest and anterior and posterior parietal presentations, if the blades are applied over the parietal bone and the opposite malar eminence, the asynclitism corrected which is usually present, it will be found that locking of the blades does not occur well. If light traction is then applied the operator will usually be rewarded by the head rotating inside the blades. When this has taken place, they can be locked properly and delivery effected. At the termination of delivery, when the anterior fontanelle comes into view, it is wise to remove the blades, as delivery by Ritgen's method affords as much protection as leaving the blades on.

With regard to podalic version, a few points in technic deserve stressing. Long rubber gloves, well lubricated, should be used. The membranes are better ruptured some distance from the os, as described by Peu, 1694. Care should be taken to have the arms folded on the child's chest. The external hand should press the foetal head to cause flexion and thus preserve the foetal ovoid, which will facilitate turning. The presence of meconium does not mean foetal distress, but is usually caused by pressure on the abdomen of the child.

This operation is one that should be done deliberately, without hurrying. The time limit of eight minutes stipulated by Williams, and the calling off of the minutes by the clock, as advocated by DeLee, is a mistake. The foetal injury will vary directly with the haste exhibited.

The shoulders should be delivered anteriorly by rotation, unless they come quite easily posteriorly. The child is rotated slowly, first trying one shoulder, and then the other. The rotation is carried to the left or right as the case may be, until the foetal sternum is practically directed towards the ceiling of the room, until one or the other shoulder slips out from under the symphysis. Extension of the arms may be determined by palpation, or will be found to exist when the angle of the scapula is drawn away some distance from the foetal spine. If the after coming head offers difficulty, forceps are much superior to at-

tempting a difficult Mauriceau-Smellie-Veit maneuver.

In conclusion, one should carefully study the case in labor where dystocia exists and choose that procedure which has given the best results in his hands, after the indication and conditions have been satisfied. Let the patient in labor be fortified by a conservative operator who will intervene before she is exhausted and becomes a poor surgical risk.

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DISCUSSION

Dr. Harold Henderson (Detroit): Dr. Pearce has indicated that there are several factors which must be considered in dealing with any case of dystocia. One of the most important is the physician himself. There are just as many types of training and different degrees of ability in handling an obstetrical case as there are physicians. We must consider the surroundings under which he is operating. It is impossible to perform major surgical procedures in the home where you haven't all the facilities, especially in some of the places where there is no electric light and where hot water is rather difficult to obtain. The number and the training of our assistants has a lot to do with what we should do in these cases. I do not believe we should condemn version or forceps because it teaches men, whether or not properly qualified, to take up these operations.

If we were to discuss the treatment of carcinoma of the stomach and advocate certain radical operations of the stomach in such a condition, it is no reason at all why we should stop doing that because there are certain men who would take up this operation who were not properly qualified. If we speak about version and go through an elaborate discussion of the technic or discuss more difficult forceps operations, it doesn't mean that everybody should do that. It means that we should choose our operation depending on the surroundings and the type of man who is doing the operation.

If we have a well-equipped hospital with a specialist who has been thoroughly trained in all types of delivery, I think he should be allowed to use his own discretion. If we are discussing this subject with medical students we certainly should follow the ideas of DeLee and Williams in their indications for version and for the use of forceps.

I have found that if we follow textbook indications we will very rarely get into trouble. But, if we take up the latest medical journal and read about splitting of cervix and doing high forceps

or version and if that sort of procedure is taken up by men who are doing an occasional obstetrical case, there is no doubt whatever but what there will be a great deal of difficulty.

I want to say about episiotomy, which Dr. Pearce advocated, I found that it was very valuable where we can get proper exposure and where we have plenty of help to make an accurate approximation and where we have extra good postpartum care.

I have done episiotomy in hospitals where the postpartum care was not good, with the same technic that I have used where we have good postpartum care, and the results are different. If we are going to do primiparas where we are not sure of our technic, the old through and through silk worm is probably the best and you take your chances at getting a tear. If we are doing episiotomy we must be sure that there are strict aseptic precautions used throughout and our postpartum cares must be perfect.

Let us remember what has been said in this paper, that we should not try to push a woman too far. A good many of them are left in labor too long. There is no question about that at all. It results in a greatly increased maternal morbidity and certainly a greatly increased fetal mortality. To have the head on the perineum with the cervix dilated after a rupture of the membrane for three or four hours, that is cruelty and should not be allowed to go on even in the poorest of surroundings. A low, or midforceps, can be done with every degree of security. Let us remember that our version, or Bill's maneuver, and, or forceps should be carefully inquired into and the most suitable type used for each indication.

Dr. George Kamperman (Detroit): I didn't hear all of Dr. Pearce's paper, but I think Dr. Henderson has probably hit the nail on the head when he practically said that we must individualize. We cannot be dogmatic and say, with Potter, that we must do version in every case, or with some others, that we must do a forcep. Every case is a law unto itself as well as every operator is a law unto himself.

Personally, I feel that obstetricians in general, and by that I include general practitioners because they are the biggest obstetricians we have, probably the majority of women will always be handled by the general practitioner, and his work is usually good. We must classify him among the operators when we talk on this subject.

I believe obstetricians and general practitioners will always use forceps more than they will versions, simply because there are more of those cases. Of all the cases we use forceps on, the most common case is where the head is on the perineum and we have an inertia and the patient is relieved by low forceps. No one would ever think of doing a version except Potter. Most practitioners will find they get a great deal of experience with forceps and a version will always be more or less the unusual case. That is simply because of the large run of cases.

A great many cases may need forceps, can easily be delivered by forceps, but the case that requires version is not as frequent. My feeling is that version competes with forceps only when the head is high. I do not believe, as a rule, that we should do versions on patients where the head is definitely below the spine or on the pelvic floor. If the head is high up, then version comes in competition with forceps and in those cases it can be considered. But because of the greater experience that the practitioner gains from for-

ceps, because of the low forceps, he probably will be in cases better able to do a midforcep than a version.

That is simply in line with what Dr. Henderson says, that every operator is a law unto himself. A man must adopt the operation that he is best suited for. From the records of most hospitals I am quite sure that that applies to specialists as well as others, that they have more experience with forceps and for that reason are more likely to try forceps. I imagine they will probably get better results with forceps than with versions. The only cases where we feel that version and forceps compete are those where the head is high.

As was mentioned, I think one mistake often made with version is that version is adopted as a secondary operation. The patient is in labor for awhile and the obstetrician attempts forceps and is unable to do it, and then he tries version. That is disastrous. Every one does that once in awhile. We find that there is hardly an obstetrician who hasn't a case like that on his record. He misjudges the case and thinks he can deliver with forceps and fails, and then tries version. The careful study of such a case and the adoption of version as a primary operation, would obviate a great many troubles.

One other point I want to make is on the question of fetal injury. We naturally associate fetal injury with difficult forcep deliveries. Let us not forget that fetal injuries occur with version. On our records at Harper hospital we have many a case where versions were performed, apparently quite successfully and quite easily, but the baby died. An autopsy would show a cerebral hemorrhage. It is surprising how often that occurs. I feel that we must remember that, because there are definite fetal injuries that will occur with version.

About women being in labor too long. I want to take a little exception to Dr. Henderson. That may be true that some patients are allowed to go too long, but my feeling is that some of them are hurried too much, although it is a mistake to let a woman go in labor too long with the head on the perineum, yet, at the same time, too early delivery, I think, is in most cases conducive of more harm than one where a little more time is allowed.

Dr. H. B. Zemmer (Lapeer): I was very much interested in the reference to morbidity statistics that Dr. Pearce mentioned. Recently those of us at Lapeer have had considerable opportunity to go over the histories of the inmates of the feeble-minded home there, this being required because we are sterilizing a number of those patients and the histories are before us.

It is strikingly common to find that in the history of that particular individual there was a forceps delivery. I am just throwing this out as a suggestion that I think a great deal of work can be done in checking up the morbidity statistics in later years on forceps delivery. This, of course, isn't always manifest in the first year and sometimes not until the child is two years and three years old. Then something happens, the child isn't walking or talking, or it isn't developing as it should, then we find that they are subjects for the feeble-minded home. They never do develop properly. I think an investigation along that line over a period of years should prove very interesting.

Dr. Harry Pearce (Detroit): Dr. Henderson's remarks about episiotomy, of course, are correct. If you are doing episiotomy you certainly must be in position to make a correct anatomical approximation. That not only holds for episiotomy, but for a laceration. Numerous times, as an interne, I have seen patients have a deep second degree laceration and the attending physician took care of that by two or three gut sutures which he used in most cases. But, in all cases you should have an anatomical approximation made, just as you would in episiotomy or any other incision.

About the different maneuvers—Dr. Tew apparently favors manual rotation. I like that very much myself. There is one difficulty where manual rotation is concerned, and that especially holds in the right occipitoposterior when the head is rotated, sometimes it won't stay rotated and returns to its former position while you are attempting to apply your forceps. Of course, in the left occipitoposterior that is not so apt to occur.

Dr. Kamperman made the statement that more forceps operations were performed. The reason for that is that the average patient left in labor and treated expectantly will deliver to the extent that the head is engaged, which means, it is on the level with the spines with two-thirds of the sacrum covered and three-quarters of the symphysis, which in a version doesn't exist because those heads are practically always high.

With regard to mortality with version and forceps, there is an article in the American Journal of Gynecology and Obstetrics, which was read before the Gynecological and Obstetrical Society, in which Dr. Kamperman reported the statistics for Harper hospital for 1925 and 1926, in which they had 78 deaths of full-term children, that is, born at term. Of those deaths, 30 were attributed to delivery; and of the 30 delivery deaths, 8 are listed for forceps, 4 were listed for forceps and version. Those were undoubtedly cases where version was attempted as a complementary operation, and 4 were versions themselves.

ETHER DENOUNCED AS DANGEROUS

Ether has been denounced by the dean of the University of Michigan medical school as "the most dangerous anesthetic in modern surgery." Dr. Hugh Cabot let it be known that in his opinion "if it were possible to trace casualties to the use of ether in the operating room, it would have been found to have killed more people than any of the other three anesthetic used: chloroform, nitrous oxide or ethylene." Dr. Cabot continued his challenge of the use of ether by stating that in the past, less than 10 per cent of the deaths which could be traced to the administration of that anesthetic were ever published. The mor-

tality in ether deaths, except in a very few cases, does not come immediately after its administration, he said, as is seen in the cases of patients exhibiting a fatal contraindication for chloroform. In a few days, however, complications seem to develop, and death is said to be due to "cardiac failure, bronchial pneumonia, or some other pulmonary complication that satisfies the surgeon," he went on. Dr. Cabot declared that the explosions which have attended the use of ethylene gas have been due to "careless methods manifested in its administration."—Science Service.

THE ROLE OF BLOOD TRANSFUSION IN THE TREATMENT OF INFANTS AND CHILDREN*

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During the year 1925, 145 transfusions as well as 58 intra-peritoneal injections of blood were given, at the Children's Hospital of Michigan, Detroit. In 1926 these had increased to 264 transfusions with 31 intra-peritoneal injections, while during the year 1927 there were 341 transfusions, three exsanguination transfusions and only two intra-peritoneals, both of them being on the same patient. Prior to July 1926, nearly all the transfusions were performed by the citrate method but since that date 92% have been unmodified blood.

This experience seems to be in keeping with that of other pediatric hospitals where, within a comparatively few years, more and more dependence has been placed upon the giving of whole or citrated blood in the therapy of the diseases of children, particularly in young infants.

The technic employed in the transfusions in which whole blood is given, is the Lindemann syringe method, the blood being withdrawn from the donor into paraffined syringes and transferred rapidly to the recipient, preferably by the way of the saphenous vein at the ankle. The vein at this point is selected because of its constancy in position, the ease by which it is dissected out, and its freedom from back-flow because of the valves above. In the absence of evidence respiratory or cardiac embarrassment the amount usually given is about 15 cc. per pound of body weight, although often more has been safely given to very dehydrated, marasmic infants, even as much as 20 c.c. per pound.

By using whole blood, given in this manner, marked reactions have occurred very rarely, although mild elevations of temperature are noted fairly frequently, which is in sharp contrast to the number reported in adults where they apparently occur in about 25% of transfusions³. In this group the only grave reaction was later found to have been due to error in typing of the recipient; fortunately, however, the outcome was not fatal and did not have any apparent deleterious effect on the patient's course. Some patients were made worse but in these it was not due to reaction but to error in clinical judgment where the patient had definite contra-indication to giving fluid intravenously.

Temperature reactions (presumably proteolytic reactions, occurring in 1 to 12 hours) have apparently been more frequent and more severe in those receiving large amounts of citrated blood, as well as

those suffering from severe anaemias or leukemias. Most of the patients and donors were typed by using the standard type II and type III sera, a small number being cross-agglutinated as an added precaution. So-called universal donors are not used except when donors of the same type cannot be obtained and then only after careful cross-agglutination. The donors are usually friends or relatives on whom no Wassermann reactions have been done but as far as we are aware no communicable disease has been transmitted from donor to recipient as has been occasionally reported in the literature⁴. It has been our practice to use citrated blood only where direct transfusion is contra-indicated by such conditions as septicemia, congenital syphilis or acute infectious disease in the recipient, as well as those cases in older children where their grave condition necessitated bringing the blood from the operating room to the bed side.

Unger¹ some time ago published as his opinion that the addition of sodium citrate to blood was undesirable because it tended to diminish the fragility of the red cells, lowered the opsonic index, diminished the phagocytic power of the leucocytes and developed anticomplementary substances in the blood. His contention was, however, later refuted by Mellon, Hastings and Casey² and we feel that, with the exception of anemias, hemorrhagic diatheses, and other blood disturbances, citrated blood can be used almost as satisfactorily where facilities are not available for giving whole blood.

In going over the case histories of a large number of infants and children who have had transfusions, one is confronted by a group of patients in which the mortality rate is very high, because it is naturally the most desperate and most critical who are transfused in an effort to save life. This makes an unbiased evaluation

* Read before section on Pediatrics 108th Annual Meeting of the Michigan State Medical Society, Detroit, September 27, 1928.

of its value more difficult, especially from perusal of hospital records. The problem is made even more complicated by the fact that where more than one transfusion was given during the patient's stay in hospital the indications for each, often are quite different. This point will be considered at greater length in speaking of hospital infections.

Chart 1 indicates graphically the conditions in the treatment of which transfusions were done in our series of 300 cases during 1926-1927. The few that

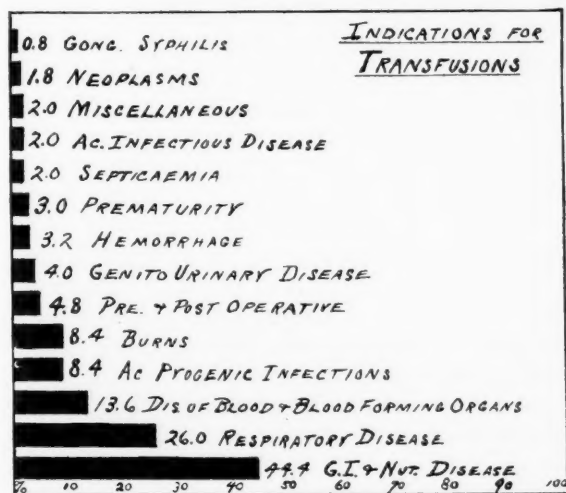


Chart I

were done in congenital syphilis as an adjunct to antiluetic treatment were given for the anemia and malnutrition which so often develops, partly as a result of the difficulty in feeding. They deserve little comment except to say that citrated blood was given when the donor was anyone but the mother, or a known syphilitic father, in order to safeguard the donor against possible accidental transmission of the disease. In the group headed neoplasms of which there were four, all of them malignant, the blood was given, in two for the cachexia ensuing from malignant new growth and in the other two it was given in an effort to prevent exodus from repeated hemorrhages resulting from intensive X-ray therapy, the results being of course very transitory. The white cell counts of the two mentioned after X-ray fell to 650 and 300 respectively, with no platelets visible in the blood smears.

The miscellaneous group included cases of asthma, eczema, chr. nephritis, congenital abnormality of the heart (associated with severe marasmus), intestinal gangrene, congenital abnormality of the intestine and acute encephalitis, none of

them in sufficient number to justify any conclusions. The possibility of benefit in asthma has been pointed out by McBroom⁵ put up to date we have not had the opportunity of putting it to the test.

Five children with septicemia were transfused with two recoveries and three deaths. Whenever this diagnosis is made or suspected, the citrate method is always used, as it is felt that the safety of the donor is more to be considered than any possible advantage that unmodified blood may have⁶, especially when we are dealing with a condition in which the value of the procedure is in so much doubt. The children that died were found to be suffering from pneumococcus, staphylococcus and streptococcus septicemia respectively, the recoveries being in one with a streptococcus hemolyticus infection, blood being given on four occasions, and the donor was given antistreptococcic serum before one of them. The other recovery was in a patient in which the diagnosis was not fully substantiated, it was presumed to be pneumococcus. Nine children suffering from acute infectious disease were given citrated blood (for the reason mentioned previously) the blood being transported to the patient's room. Two had typhoid and another paratyphoid A in which the procedure was undertaken because of their poor general condition as shown by extreme prostration and associated hyperpyrexia. Other infectious cases transfused were Vincent's angina, scarlet fever, and measles. In erysipelas, while blood seems to have a very important place in treatment, especially in the younger infants⁷, yet we feel that its value is much enhanced by concomitant treatment with erysipelas antitoxin. Also in this connection, as well as in septicemia, we have tried a limited number of transfusions following the administration of antitoxin to the donors apparently with the beneficial results that have been found by others^{9, 10, 11}.

Prematurity is one of the conditions in which blood, given in small amounts at the proper time, is frequently a life-saving measure. We have repeatedly found than an alarming decline in weight, which could not be checked by change of feeding or the administration of subcutaneous saline and glucose, was quickly stopped by timely giving of blood. Many of them, too, show moderate degrees of secondary anemia, particularly if parenteral infection be present, both of which are helped by new blood.

Three and two-tenths per cent of our

cases were given blood to arrest hemorrhage, the time-honoured indication for transfusion. Under this heading we have placed hemorrhage resulting from operation wounds, haemophilia, severe epistaxis, visceral hemorrhage and hemorrhagic disease of the new-born. Probably nowhere else are the results of blood transfusion so dramatic as in hemorrhagic disease where infants are restored to normal health after being almost moribund. In none of them was more than one transfusion necessary, using either whole or citrated blood. In the conditions mentioned the permanency of the result depended entirely upon the underlying condition.

Under the heading of pre- and post-operative, 15 were done. The pre-operative ones were those in which an effort was made to lessen the operative risk by improving the patient's general condition or to attempt to increase their resistance. Post-operative transfusion has not been practiced here as frequently as it has elsewhere, probably not as frequently as it should be. When it has been done, as in the case illustrated by Chart II, great benefit apparently results in preventing post-operative shock, hyperpyrexia, and shortening the patient's stay in the hospital. The greatest benefit was noted following operations of long duration, intussusception, and intestinal obstruction.

Case No. 41907. Age 1 mo., male. Admitted October 18, 1926. Vomiting became progressively worse for 10 days prior to admission, projectile in type, and accompanied by rapid loss of weight

after admission, and operation followed immediately by transfusion of 75 c.c. blood. Child was given breast milk starting 4 hrs. p. o. at 4 hour intervals, received daily interstitial of glucose, and was discharged in good condition on the 5th day following operation.

Cases of genito-urinary disease requiring transfusion are largely cases of pyelitis and pyelonephritis, blood being administered both for acute toxemia and the resulting secondary anemia. Two cases of pyelitis were transfused during the acute stage when the temperature was over 105° and the children appeared very pale and toxic. Two others were transfused more than once during the second and third week of illness as they did not show any improvement and were becoming very anemic. In all four there was decided improvement, particularly in the first two. The only ones that were transfused for pyelonephritis both died. One was apparently due to paratyphoid A infection of the kidney as this organism was repeatedly obtained on culture of the urine. The other child had an associated bronchopneumonia, as well as severe rickets, death coming following a series of convulsions.

The cases of osteomyelitis were nearly all transfused in the acute stages when the temperature was high, toxemia intense, and the possibility seemed good for attacking an early septicemia. The immediate results obtained were good but frequently the procedure had to be repeated. The empyemas on the other hand were done late in the disease when the patient was running a septic temperature and losing ground from long continued absorption; these almost all showing considerable temporary improvement. Other cases showing at least temporary benefit were those of septic arthritis, pyoderma, acute sinusitis, cellulitis, abscesses, and acute peritonitis; in the last named, however, little permanent result could be ascribed to the blood.

Transfusion always plays an important role in the therapy of burns in children, as burns or scalds in infants or small children are always serious and are usually accompanied by toxemia of greater or lesser degree, particularly when proper treatment has not been immediately instituted. In the early stage of a burn, blood is given to combat the shock which usually develops, in the later stages in the treatment of toxemia and sepsis. Dr. Davidson, who is in charge of all burn cases, is now finding that early transfusion to a great extent eliminates toxemia but of course has no influence on the course of the patient during the time when there is absorption of

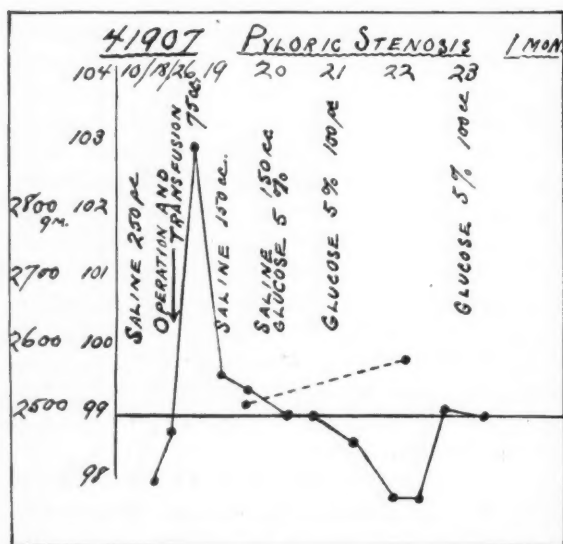


Chart II

and constipation. Child very emaciated, abdomen sunken, skin inelastic. Gastric peristalsis seen, and pyloric tumor felt. Interstitial saline given prior to operation, which was performed 4 hours

septic material from the healing area. His routine is to give saline immediately the patient is admitted and to start applying tannic acid while typing is being done, then a large transfusion, followed by a second in from 12 to 24 hours if the patient begins to get toxic. During the last 18 months the early mortality in the burn cases has been divided almost by one-third. Transfusion is again resorted to during the stage of sepsis, prior to skin grafting and repeated as often as is indicated usually with great benefit. Exsanguination transfusion⁸ was resorted to on three occasions in which the early treatment had not been adequate or started soon enough with two deaths and one recovery. The one recovery is recorded in detail below and illustrated by Chart III.

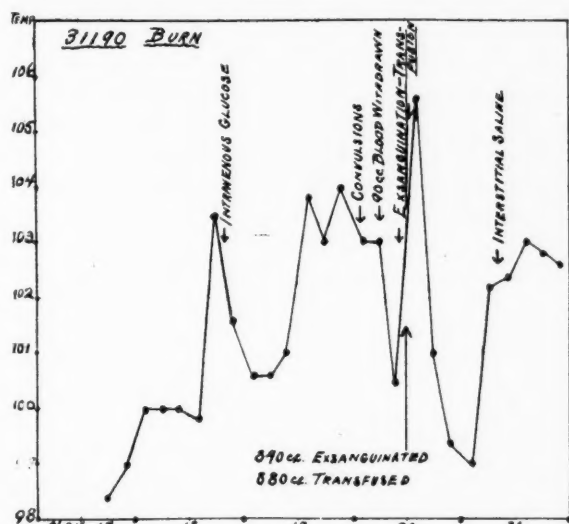


Chart III

Case No. 31190. Admitted November 17, 1926, 6:30 p. m. Age 2 years, male. Boiling water spilt on patient 1½ hours before admission, causing extensive second degree burn covering face, left shoulder, and left arm, left side of chest and abdomen, as well as left thigh. Examination negative except for acute nasopharyngitis and moderate shock. Twenty-four hours later patient was given intravenous glucose solution as the temperature was elevated and patient showed generalized twitching. During this time he was also taking large amounts of fluid by mouth. About 8:30 a. m. November 20, he began to have generalized convulsions, for which 8 per cent magnesium sulphate solution was given followed by subcutaneous glucose solution. An attempt was also made to give intravenous saline and glucose but this was immediately stopped because the patient developed acute pulmonary oedema of such degree that blood tinged, frothy material ran freely from the nose and mouth. This stopped almost as quickly as it began, when 90 c.c. of blood was withdrawn and his condition improved sufficiently to warrant proceeding with an exsanguination transfusion. This was completed about 3 p. m., 840 c.c. of blood being removed and 880 c.c. given, at that time the temperature being

105.6 and the patient was in a semi-comatose condition. During the next 12 hours temperature gradually fell to 99.4. There were no further signs of toxemia but his course was later complicated by septicemia, which in turn was followed by osteomyelitis, multiple abscesses and septic arthritis, one other transfusion being necessary before his discharge from the hospital on April 19, 1927.

Secondary anemia, due to any cause, such as improper diet, iron starvation, rickets, and chronic pyogenic infection, responds rapidly to the giving of adequate amounts of blood and in this, of course, our experience is not at all unique and deserves no further comment.

Three cases of aplastic anemia were transfused with only one recovery. Repeated, small transfusions of whole blood were given with the idea of stimulating the bone marrow, with only fairly satisfactory results as far as permanent cure was concerned. In one case which eventually terminated in death, no less than 14 were given, all of them producing nothing better than temporary improvement. If a focus of infection is found the removal of this, together with repeated transfusion, is of great benefit and in one case gave excellent results where the focus was a chronic osteomyelitis. In one case of sickle-cell anemia removal of the spleen, following transfusion, caused a return of the red count and the hemoglobin to the normal level, but not apparently a complete cure as the child still shows some hemolysis, although she is showing less numerous infections and blood destruction is not so marked. The same may be said concerning congenital hemolytic jaundice. In one case in which splenectomy was done the blood picture was stabilized so that the patient has not required further transfusions, but sufficient time has not yet elapsed to pronounce a permanent cure. During the last five years about 10 cases of severe anemia associated with changes in the skull and long bones, (Von Jaksch's) have been under Dr. Cooley's care in the hospital and here, too, he has found transfusions to give rather temporary benefit even in those who were splenectomized, the reason being that probably the disease is the result of congenital defect in the blood-forming mechanism.

It has been stated that the giving of blood in the acute leukemias sometimes produced actual harm by aggravating the disease. However, in those patients in which we did a number of transfusions no apparent injury was done, although no permanent benefit resulted; their demise usually from hemorrhage being sometimes

temporarily delayed. Hemorrhage in symptomatic purpura is readily controlled by one or more transfusions if the underlying cause is amenable to treatment. One fatality from hemorrhage was a patient diagnosed as Henoch's purpura who died on the 15th day after admission from severe intestinal hemorrhage. The other death was in a case of thrombocytopenic purpura who died of hemorrhage following splenectomy. He had previously had several transfusions for severe hemorrhage with very satisfactory results.

Children suffering from respiratory disease with the complications, otitis media and mastoiditis, furnished the material for 26 per cent of our total number of transfusions. The children classed in this group, together with those classed under nutritional and gastro-intestinal disease, comprise over 70 per cent of the total number of transfusions and are extremely important not only because of their number but also because it is in these that the indications for giving blood are the least clearly defined, the results often disappointing, and the value of the procedure most difficult to judge because of the type of cases with which we are dealing, and also because other therapeutic measures are usually instituted at the same time.

Respiratory disease, otitis media and mastoiditis take on an added importance when we consider how frequently they occur as hospital complications attacking all types of cases, most often in the fall, winter, and spring months, being of greatest importance in marasmic infants, and coming as post-operative complications after even minor surgical procedures done under general anesthesia.

In all, there were 50 patients transfused who were suffering from bronchopneumonia; in 30 of them the pneumonia was present at the time of the child's admission to the hospital, the remaining 20 having it as a complication. These were most often done by the citrate method in order that the blood might be given very slowly so as not to add undue strain to the already embarrassed circulation. The amount given was about 10 c.c. per pound of body weight or less, depending on the child's condition. The indications that prompted giving blood were (1) intense toxemia (2) continued spread of the pneumonic process, (3) associated secondary anemia and (4) failure of resolution. In the 30 cases in which bronchopneumonia was present on admission to the hospital the results on the whole were disappointing, as

in only nine were any signs of improvement noted, three of these being associated with secondary anemia, and two with severe diarrhoea. In the remainder no improvement was noted in general condition or in the rate of spread of pneumonia, whether the blood was given soon after admission or late in the course of the disease. Also, as in the pneumonias which came as complications of other conditions, those in which cyanosis was present, or those in whom there were signs of extensive oedema of the lungs were made definitely worse by giving even small amounts of blood. In the pneumonias which complicated diarrhoeas, malnutrition, burns, following anesthesia, or nasopharyngitis, the transfusions were usually done late in the disease because of the patient's precarious condition, death ensuing shortly afterwards in 13 of the 20 patients. In only four was any improvement noted, all of these being done soon after the onset of the pneumonia. Only two patients with lobar pneumonia were done, one improving considerably in general condition, the other dying of peritonitis (pneumococcal). Reports in the literature are somewhat at variance in regard to the benefit of transfusion in pneumonias. Some authors have reported results very similar to ours¹² while others have been more enthusiastic¹⁴ and gave case reports illustrating excellent results. A few were given blood to prevent the onset of pneumonia when suffering from acute diffuse bronchitis and nasopharyngitis, but the result hoped for was not achieved nor was the downward trend influenced at all. The same may be said about acute nasopharyngeal infection—the complications were not prevented but often, however, the child's downhill course was checked. As far as could be judged from case records, as well as personal experience, we do not think that the occurrence of the complications bronchopneumonia, otitis media or mastoiditis, were forestalled in those patients to whom transfusions were given soon after the patient's admission to the hospital in the treatment of their primary condition, but it would appear that often their effect upon the infants was less, with a consequent reduction in the number of deaths.

The largest single group was the one in which were our cases of otitis media and mastoiditis, there being 55 infants, nearly all under 14 months, who were given a total of 68 transfusions. In this group were placed those cases in which otitis or

mastoiditis was present on admission whenever it was the only condition present, or seemed to be the most important, and was directly responsible for the child being admitted. This group also included those cases admitted for other conditions who developed otitis media, with or without mastoiditis, and whose course was unfavorably influenced by these infections, necessitating giving blood in addition to their other treatment.

In the first type of case where mastoiditis and otitis were present at the time of admission we find that in acutely ill patients with mastoiditis and accompanying otitis media the results are excellent if blood is given early, either before the operation or immediately thereafter. The same holds true in those with acute otitis media accompanied by toxemia, acidosis, parenteral diarrhoea, with or without mastoiditis, where blood is given early, four deaths occurring in 12 cases, one of them due to bronchopneumonia. Where, however, the otitis, acute or chronic, is accompanied by severe malnutrition, often with diarrhoea and vomiting, the results are not at all good, as is shown by that fact that seven out of 10 died and slight improvement was noted in the others.

There were 21 instances of the second type of case, those in which either otitis or mastoiditis was a complication and only seven showed any degree of improvement, either slight or marked, and there were 10 deaths. This apparently unfavorable situation is probably partly due to several causes, (1) the patient is usually one that is in an advanced state of malnutrition, very often having been a difficult feeding problem for some time, (2) giving blood is not resorted to until the patient becomes profoundly toxic or goes into collapse and (3) drainage of the mastoid antrum or mastoid cells is also done late. The ones that receive benefit from blood transfusion are usually those who receive it early before their nutrition is too seriously impaired.

Case Report No. 41869. Age 11 mos. Female. (See Chart IV.) Child had very severe diarrhoea lasting for 2 weeks starting about 1 month before admission to hospital. During the month the baby lost considerable weight and continued to have rather loose stools. On examination child was found to be poorly developed and poorly nourished, with extreme dehydration. Left otitis media present.

Following admission child was given daily saline interstitials, both ears were opened and she gained rapidly for 4 days then began to go downhill rapidly, at the same time running an irregular elevation of temperature. On October

16th patient was given 200 c.c. of whole blood. Condition remained poor for about 24 hours, then gradual improvement began, the temperature fell to normal, and the weight began to go up steadily until discharge 16 days later.

Under the heading of gastro-intestinal and nutritional disease are placed marasmus, fermentative diarrhoea, infectious diarrhoea, parenteral diarrhoea, acute intestinal intoxication and chronic enteritis

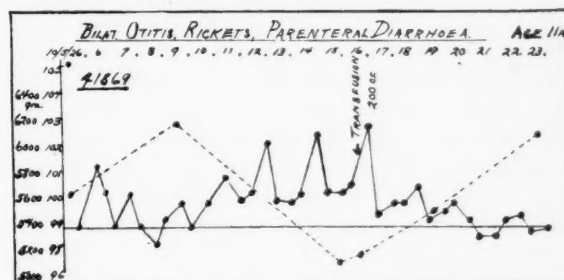


Chart IV

and colitis, between them responsible for almost 45 per cent of all the transfusions and accounting for the peak that is reached each August and September during the season when the most severe diarrhoeas are encountered. Owing to the class of patients admitted to the Children's Hospital nearly all those suffering from gastro-intestinal disease have been poorly or indifferently fed so they nearly all show some degree of malnutrition, very often with severe rickets, especially among the colored patients. Twenty-seven were admitted to the hospital with extreme marasmus, due to various causes, most of them from long continued vomiting and poor feeding, 13 of them being so bad that they were transfused within 48 hours of the time they came in and of these seven showed rapid and marked improvement. The remaining 14 were transfused at a later time because of the onset of pharyngitis, diarrhoea, otitis, mastoiditis, or failure to improve, some of them from 1 to 5 months later, with rather indifferent results as one might expect. Almost without exception, these children, while in the hospital were fed on concentrated milk mixtures, received fluids, by mouth between feedings, as well as subcutaneously once or twice daily.

Infants suffering from acute infectious diarrhoea, having frequent blood-stained stools, usually drowsy, and often almost in a state of collapse, and showing marked dehydration were given glucose and saline subcutaneously while donors were being typed, then were given large transfusions at the earliest possible moment, 11 out of

12 getting blood within 24 hours. The subsequent treatment was carried on with glucose and saline intravenously and subcutaneously combined with proper diets. The results have been extremely gratifying, there being only three deaths out of the 11 mentioned above, some of them, however, requiring more than one transfusion before being entirely out of danger. Parenteral diarrhoea formed a large and important group, there being 32 of the acute diarrhoeas receiving whole blood whose symptoms were apparently the result of parenteral infection, the most common being nasopharyngitis, next otitis media, bronchopneumonia, and mastoiditis. Most of them also presented some degree of anhydremic intoxication from loss of fluids as well as advanced marasmus. In these, as well as in the acute infectious diarrhoeas and acute intoxications, the value of giving the blood early in the course of the disease along with fluids by mouth and saline or glucose by hypodermatoclysis is clearly brought out by the records of our cases. Without blood these children do poorly or at best usually make very slow progress, because no fluid is as effective in replacing depleted plasma as blood plasma and also because living functioning cells are introduced along with it. Eighteen of those suffering from severe parenteral diarrhoea received a transfusion within 48 hours of admission and 13 of them showed improvement varying from moderate to very marked. Three died from bronchopneumonia while the other two failed to respond to all treatment, despite repeated transfusion. The reverse is shown by the fact that of the 14 given blood later in their course only seven improved, one showed no change and six died, two of them from bronchopneumonia. With cases of fermentative diarrhoea the situation is somewhat different because they are as a rule uncomplicated and only those of great severity which have marked degrees of dehydration and intoxication need such drastic treatment as transfusion. Twenty children received blood for this reason and 13 were apparently considerably helped by this procedure. Four of these were almost moribund on admission and did not respond to treatment, three were given blood late for complications without result. In the acute intoxications following severe diarrhoea (cholera infantum) the same routine is followed as described under acute infectious diarrhoea, that is, giving saline and glucose immediately, blood as soon as possible, and following

with further saline and glucose, the result obtained being extremely good, 5 out of 6 patients showing extremely rapid improvement.

Case Report No. 41278, female, age 4 mos. (See Chart V.) Patient admitted to Hospital on September 13, 1926 at 11:30 p. m. with a history of severe vomiting for a week, accompanied by diarrhoea with green watery stools for 4 days. She had been weaned 1 week before the onset of illness and given a mixture of cow's milk, water, limewater and cane sugar. On examination child appeared moderately ill, showed considerable ex-

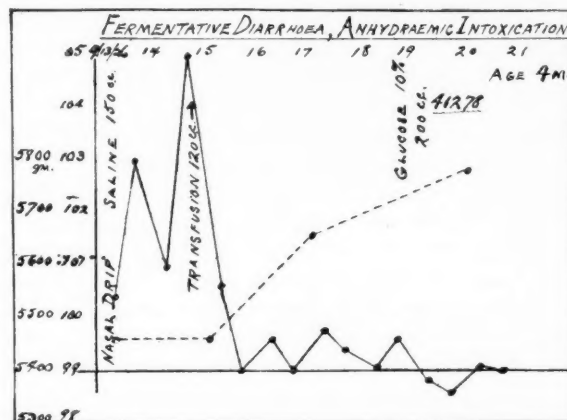


Chart V

coriation of the buttocks and moderate degree of dehydration. She was given continuous nasal drip of 10 per cent glucose for 12 hours, then was started on small protein milk feedings. On September 15th her temperature was 105 and the child appeared pale and drowsy, the pharynx showed slight injection, and a few coarse rales were heard in the chest. 120 c.c. of whole blood was given with 30 c.c. of 100 per cent glucose solution. Improvement was almost immediate. The temperature fell rapidly to normal and the patient gained weight, being discharged cured, 8 days after admission.

Attention has been called to the use of transfusion as an aid in the treatment of chronic entero-colitis in infants by Wood and Aidin¹³ but in the few that we have on record very definite conclusions could not be drawn; however, in these the effect has not been marked, but it would seem to have a place in combating anemia, exhaustion and dehydration.

SUMMARY AND CONCLUSIONS

1. In 300 cases reviewed reactions were very infrequent, the most severe following large amounts of citrated blood and in the grave anemias.
2. Citrated blood is as effective in controlling bleeding in hemorrhagic disease of the new born as unmodified blood.
3. Following major operations giving blood helps to prevent post-operative shock and toxemia.
4. Early transfusion in cases of exten-

six burns prevents toxemia and overcomes shock, thereby greatly lessening the early mortality.

5. Repeated transfusions, alone, effect only temporary improvement in severe aplastic anemia, other forms or primary anemia sicklecell anemia, congenital hemolytic jaundice and thrombocytopenic purpura.

6. Hospital infections and complications are not prevented by early transfusion for the primary condition.

7. Cases of bronchopneumonia show few good results. Many are made definitely worse by even small amounts of blood.

8. Blood given early in the treatment of severe marasmus, anhydremic intoxications, and in the various types of acute

diarrhoeal disease usually causes marked and rapid improvement.

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CERTAIN DIFFICULTIES AND EMERGENCIES OF OBSTETRIC PRACTICE*

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II. With the time at my disposal for this paper, I propose to deal with those difficulties and emergencies which seem to occur most commonly. I feel quite certain that I will not be able to do justice to any one individual subject here mentioned; since each of these is often of sufficient interest to form the topic of discussion for one or more meetings.

One may say that the Difficulties and Emergencies of Obstetric Practice begin some time previous to the occurrence of pregnancy and do not end for at least two months or more post-partum. Following this two months post-partum period we will classify the patient as gynecological. It seems convenient therefore to consider the difficulties and emergencies of obstetric practice in four groups—namely—the anti-pregnancy period, the anti-natal period, the labour period and the post-partum period.

It is very gratifying for those of us who are particularly interested in preventive medicine, and I trust this means each and every one of us, to note how much more frequently patients are consulting us before pregnancy ensues with reference to their physical or mental ability to undertake pregnancy. Such of my patients so far have usually had some rather definite reason for asking advice, yet it is pleasing to see that the general public are more and more realizing the actual value of prevention. In obstetrics we have one of the most fruitful fields of medicine for exhibiting the merits of prevention; and not

least among these is the period before pregnancy is undertaken. These patients usually come to us asking if they are physically strong enough, because they either have or believe they have some physical disability, such as a valvular heart lesion or some form of kidney disease. If the patient is found to be perfectly physically fit, the consultation and examination was certainly well worth the time and money expended. The patient's mind is relieved, often very considerably. If a physical defect is found she is advised accordingly. The patient with valvular heart disease is advised to proceed with pregnancy providing that the heart muscle has compensated well and is not giving signs or symptoms of failure under the average stress and strain of the daily routine of the patient's life. If the heart muscle is not compensating well under those circumstances and does not do so with a regulated daily life, this patient should be advised against pregnancy. The patient with chronic kidney disease, generally speaking is advised against pregnancy. However if

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the kidney function is good with the average daily diet and work we might have to qualify such a statement. This would depend chiefly upon certain factors namely—Is the kidney function normal, and is there any kidney degeneration? Osler's dictum here is an average safe one—"A patient with chronic Bright's disease should not marry. A patient with active pulmonary tuberculosis should be advised not to become pregnant. In the clinically cured cases, I think the patient's ultimate prognosis is much better if she does not become pregnant. For the patient with a definitely small pelvis, one has this wonderful opportunity of telling her long before hand the only possible means of delivering her and getting her a living i.e. caesarean section. The border line cases, with a slightly contracted pelvis may be told of some of the possibilities at or near term, but as these cases can seldom be well judged until the relationship of the child's head and the pelvic brim is made out, and may leave these until that time comes.

Definite foci of infection should be cleared up as much as possible. The questionable teeth should be X-rayed and dealt with accordingly. Infected tonsils, I think are better removed during this period than left. A troublesome appendix is also better removed.

The difficulties presenting during the anti-natal period may be considered in two class: (a) Those due to the pregnancy. (b) Those not due to pregnancy—These two groups will be conveniently discussed as they occur during the first, second or last third of pregnancy.

First Third of Preg.	Second Third	Final Third
A		
1. Diff. of Diagnosis	1. Diff. in Diagnosis	1. Diff. in Diagnosis
2. Toxic Manifestations	2. Toxic Manifestations	2. Toxic Manifestations
3. Uterus Displacements	3. Uterine Displacements	3. Uterine Displacements
4. Hemorrhage	4. Hemorrhage	4. Hemorrhage
	5. Pyelitis	
B		
1. Acute Infections		
2. Circulating Disease		
3. Renal Disease		
4. Pulmonary Disease		
5. Surgical Emergencies		

It is almost clinically impossible to make a definite diagnosis of uterine pregnancy before the end of the first six weeks. Following this period one may have to diagnose between pregnancy and a fibrosis uteri or several small fibroids which cause uterine enlargement. In such cases of doubt one is always justified in waiting and at regular intervals noting the changes in the uterus. If these changes correspond with those of normal pregnancy, one is usually justified in considering the

patient pregnant. At pedunculated fibroid or an ovarian cyst may be separated from the body of the uterus and seldom causes much difficulty in making a differential diagnosis.

The toxic conditions which commonly occur during the first third of pregnancy are namely: Vomiting of pregnancy, ptyalism, hemorrhage—from placental site, neuritis, neuralgia, fibrositis and myositis, peuritis, certain skin eruptions.

It is a well established fact now that diet plays a most important part as a cause of many of the so-called toxic disturbances which occur during pregnancy. One of the best examples being the vomiting of pregnancy. In a case of vomiting we first make sure that the vomiting is due to the pregnancy. If so, make sure that a retroverted or retroflexed uterus is not aggravating the condition. Having done this we now get quite pleasing results with carbohydrate feeding. This may have to be carried out either intravenously, interstitially, per bowel or by mouth or by some combination of these, depending upon the severity of the vomiting. It seems that prophylaxis is again our most logical course here, and this is best done by overbalancing the diet of each patient from the onset of pregnancy with carbohydrates, along with plenty fluids.—(The other toxamias).

It seems good practice to do at least one vaginal examination during this period and if the pregnant uterus is retroverted or retroflexed, which is by far the most common displacement, it should be put in place and a pessary inserted. A retroverted or retroflexed uterus during this period is a common cause of abortion. If the uterus cannot be replaced with the first attempt—the patient may be allowed home for 24 hours with instructions to carry out certain simple exercises e.g. taking the knee-chest positions q. 2 h. for 10 minutes. Often on the second attempt the uterus is either forced up in place or is easily replaced. If this attempt fails the patient is anaesthetized and a further endeavour is made. If the uterus is impacted firmly and cannot be replaced per vaginam it is well to have the patient's abdomen previously prepared for operation. A laparotomy is done and with assistance per vaginam the uterus is brought up into proper position.

Hemorrhage occurring during the first third of pregnancy may mean a threatened or inevitable abortion; extra uterine pregnancy or uterine growths, benign or malig-

nant complicating the pregnancy. The threatened or inevitable abortions rarely gives rise to any particular difficulty or emergency. The uterine pregnancy often forms a real emergency. It is best treated by operation when first diagnosed. In extreme cases a blood transfusion just previous to, or at time of operation will often be the means of saving the life.

Coming now to the middle third of pregnancy, we will first deal with the difficulty of diagnosis. It is during the fourth month that any real doubt is found; that is before the patient is feeling life. A differentiation may have to be much between a fibroid and pregnancy or both, and on the other hand an ovarian cyst. The cyst is more readily differentiated as it is usually possible to separate the ovarian cyst from the body of the uterus. If the fibroid is localized or circumscribed the difficulty is not so great, if a generalized fibrotic condition the difficulty in diagnosis is formidable and often time alone will aid in making the diagnosis a definite one.

The toxic manifestations occurring during this second third of pregnancy are usually not as marked as those occurring during either the first or last third of pregnancy. The nausea and vomiting have usually subsided. Those most frequently complained of now are the cases neuralgia, myositis, or fibrositis. If no other definite cause can be found I think one is justified in deeming them due to a pregnancy toxemic. The treatment is one of diet for the most part.

Hemorrhage during the middle third of pregnancy usually means a threatened or inevitable abortion; arival polypus, placenta prina or new growth.

Pyetitis is a fairly common complication of pregnancy. Fortunately most of these cases respond quite readily to medicinal treatment, e.g. when the urine is acid we use potassium citrate in 20 gr. doses g. 4 h. until the urine is made alkaline: The offending organism is usually the bacillus coli. In obstinate cases one may have to istil argyrol into the pelvis of the kidney or even drain. Occasionally one is obliged to do a therapeutic abortion for the patient whose condition tends to grow worse irrespective of all other forms of treatment.

The toxic manifestations which occur during the latter third of pregnancy are mainly pre-eclamptic toxemia, eclampsia and one may include anedental hemorrhage. It seems that if a patient is regularly seen by her physician throughout

pregnancy, it is rarely that she will develop eclampsia. The routine management of pre-eclamptic toxemia is one chiefly of diet and rest. The patient can be carried along with such treatment until the baby is viable, one may then do induction in all cases in which it would be unwise to carry her to term.

The treatment of the eclamptic patient at a near term with the baby living requires careful consideration. Generally speaking I think it wise treatment to use a modified Strongnoff method. The aim being (a) To eliminate toxins as rapidly as possible through all available channels. (b) To assist in delivery if necessary when the cervix fully or nearly fully dilated. (c) To get the patient into labour as reasonably soon as you can if she fails to go into labour herself, and then to assist in delivery when the cervix is sufficiently dilated.

Caesarean section is to be considered for the eclamptic patient even with the normal pelvis—in the case of a patient full term of nearly so, pt. possibly well over 30 with a long, rather firm cervix.

Vaginal bleeding occurring during the last third of pregnancy may mean an impending miscarriage or premature labour: placenta previa; accidental hemorrhage, or new growth. Having diagnosed the case as one of placenta previa, on first explains the condition to the patient and certainly the importance of the patient's keeping in intimate touch with her physician. If satisfied that it is a case of central placenta previa—one asks patient to go to hospital until she is delivered. Then the patient is kept under close observation until at term or as near to it as one can safely get her when she is delivered by means of caesarean section without further vaginal examination. If the case is quite definitely the marginal type of placenta previa, again I think caesarean is the method of treatment. Cases of less marked marginal type particularly multiparous patients may be managed by means of version. In all cases of placenta previa it is good prophylaxis to have the patient's blood grouped and a suitable donor standing by in case one wishes to transfuse the patient with whole blood just before, during or following delivery.

The management of revealed accidental hemorrhage consists mainly in tightly packing the vagina with bauze until the cervix is sufficiently dilated for delivery; and to assist in the delivery by the quickest and safest method, usually the

application of forceps. The management of the rather rare condition of concealed accidental hemorrhage usually calls for a caesarean section with or without hysterectomy as one finds necessary. Again it is wise prophylaxis to have the patient's blood grouped and to have a suitable donor standing by for use either during or just following delivery.

The new growth which is occasionally met with is carcinoma of the cervix. If the patient is near term, the treatment would consist of a caesarean section with a total hysterectomy or a Westheim if the patient's condition would admit of such.

To save time we will leave the acute infections and deal briefly with the others of this group. Heart disease, either valvular or myocardial or both are treated primarily for the heart disease irrespective of the pregnancy. If the patient's condition continues to improve with such management the pregnancy is allowed to continue to at or near term when in many more serious cases a caesarean section under gas oxygen anaesthesia is the safest method of delivery. If the patient's condition grows worse under good cardiac management one terminates the pregnancy. The complication of pulmonary phthisis in the pregnant patient is carried out along similar lines as cardiac cases—namely if the condition improves definitely under good management she is allowed to continue, if not, the pregnancy is interrupted.

A patient with chronic nephritis is well advised not to marry, and if she marries she is better not to undertake pregnancy. If the chronic nephritis patient became pregnant one treats the chronic nephritis and if there is no improvement, or particularly if she gets worse, therapeutic abortion should be done. It is not very unwise treatment to do a therapeutic abortion early for each case with a chronic nephritis.

Among the surgical emergencies, acute appendicitis is fairly common. The treatment being appendectomy, if a definite diagnosis is made during the first forty-eight hours of the onset. The cases diagnosed later may at times be more safely treated expectantly, providing rupture has not already occurred when, of course, drainage must be established and this may be done either in the abdominal wall or by means of a posterior colpotomy. Acute cholecystitis is best treated conservatively, unless there are definite signs of biliary obstruction, when operation for removal of the obstruction and drainage of the gall

bladder established. Salpingitis complicating pregnancy is treated conservatively unless there are definite signs of a spreading peritonitis, when drainage is established, preferably by means of a posterior colpotomy.

The difficulties after labour begins, will now be considered. These are rather varied and numerous but I propose to deal only with the more common difficulties such as prolonged second stage occipito posterior cases, breech, trans and oblique presentations, vaginal hemorrhage. The most common cause of a prolonged second stage of labour in cases where the mother's pelvis is normal, and the baby is normal, is insufficient flexion. This flexion of the baby's head may be increased by properly exacted pressure per vaginam. This must of course be carried out before the head becomes too solidly wedged into the true pelvis. In other cases the most common cause is possibly some disproportion between the mother's pelvis and the presenting part of the baby. The proper management of the small pelvis cases is naturally an anti-natal problem. Generally speaking the final determining factor is the relationship of the baby's head to the pelvic brim. The decidedly contracted cases are dealt with by means of caesarean section at time of election. The border line cases may escape caesarean section or a traumatic labor by a premature induction of labour.

A safe management of the occipito posterior cases may be summed up as follows: (1) One may leave the case alone providing labour is progressing in a satisfactory manner and the condition of the mother and baby is satisfactory. (2) If interference is required, one may manually rotate and leave to mature or rotate and apply axis traction forceps. (3) Apply Kielland forceps, rotate and extract. (4) Extraction without rotation. (5) Craniotomy rotate if child is dead. The three most common difficulties in Breech presentations are: (a) Impacted breech. The management of the extended arms should be prophylactic, preventing extension. If it does occur—one must pass the hand up and deliver, preferably the posterior arm first then the anterior. In difficult after-coming head cases—one should be ready to apply forceps before making too many attempts with other methods. Personally I am using this method more frequently than the usual text book seems to advise. The impacted breech is dealt with in one of these ways: (a) Hooking a finger

around the groin and bringing down one leg. (b) Bringing down a leg with the breech hook. (c) Disengage the impacted breech and by pushing it upwards into the uterus, then bring down the anterior leg, and complete the delivery as usual.

The management of the transverse or oblique presentation during labour is simple in the early cases or it may be most difficult in cases diagnosed later in labour. In the early cases one may convert it fairly simple into either a breech or a vertex presentation. In the cases which are diagnosed later in labour the problem is different and may become one of the most formidable in obstetrics. The points which one must endeavour to make quite certain of are: (a) Is the uterus tonically contracted. (b) General condition of the mother—temperature, pulse, etc. (c) Is the baby living and in seemingly reasonable condition. If the condition of the uterus is good and the patient's general condition reasonably good, with fairly normal foetal heart sounds, one may be justified then to do an internal podalic version with the patient quite deeply anaesthetized. If the conditions of the patient and the uterus are not good, one should not attempt the internal podalic version, but resort to decapitation or evisceration and extraction. The operations under these circumstances must be carried out with extreme care and as aseptically as possible.

The management of prolapsed cord is not always simple. I will deal here only with the type of prolapsed cord after rupture of the membranes. It usually accompanies such conditions as mal-presentations, contracted or deformed pelvis and polyhydramnios.

In vertex first cases one may attempt replacing the cord and getting the head down in front of the cord, the head is maintained there manually in a flexed position until it is fixed by the uterine contraction; or forceps may be applied. If this fails one may do an internal podalic version if circumstances permit. In breech presentations the risks to the baby are less and usually with care the baby is born alive.

There are certain systemic diseases which may seriously complicate labour, e.g. cardiac disease, pulmonary tuberculosis and nephritis.

The cardiac case is fundamentally a question of heart muscle. At the one should look upon the case as a cardiac problem irrespective of the pregnancy, and

treat it as such. So long as the case is satisfactorily compensating under proper cardiac management, one has little cause to worry. When, however, compensation is failing under proper cardiac management the patient becomes a candidate for a therapeutic abortion.

Pulmonary tuberculosis makes a serious complication for pregnancy. Generally speaking it seems that if the case is active even with proper rest management, and is diagnosed during the first ten weeks, the proper procedure is a therapeutic abortion. The risk of the therapeutic abortion increases the pregnancy advances. On the other hand if the case is not very active, or can be kept under control with proper management, and the patient is particularly anxious for a baby—one may allow the pregnancy to proceed providing the situation is explained and the patient is kept under proper supervision throughout her pregnancy and labour.

Post Partum Period—

DISCUSSION ON PAPER OF W. P. TEW

Dr. Ward Seeley (Detroit): I have been very much interested in hearing Dr. Tew's discussion this morning. In fact, it has given me a great deal more confidence in myself than I have had heretofore. Especially was I glad to hear him say that he also has difficulty in feeling the fontanels in a case of labor, especially a difficult case. I have been much chagrined at times when I found a patient had been in labor for fifteen or eighteen hours and I come to do an examination by rectum or vaginally, that I have been unable to make out the position by the location of the fontanels. I thought there was something wrong with my technic. However, Dr. Tew seems to have the same difficulty. I can agree with him that about the only way to make a certain diagnosis is to feel the ear or the occiput or the brow in these cases in which we are uncertain of our position.

Unfortunately, as far as I am concerned—because I always like an argument—I am going to be unable to disagree with Dr. Tew in his treatment of eclampsia. I feel certain that the pendulum is now swinging backward again to the conservative treatment of this condition. I was brought up in a radical school in the treatment of eclampsia, with Peterson in Ann Arbor, who of course believed, at the time when he did work on eclampsia, that the only method of treatment was the rapid emptying of the uterus. I feel, in emptying the uterus rapidly, we are subjecting a patient, who is already in a serious condition medically, to a very serious surgical risk in addition. I think any of us who has had a moderate amount of experience with the so-called conservative treatment in eclampsia cannot help but see that our results are better. Certainly my mortality rate has been greatly lowered by the conservative treatment of this condition.

One point that Dr. Tew perhaps did not mention in the treatment of the nausea of pregnancy, and that is the mental attitude of the patient. The question of the so-called psychic influence.

There is a school, of course, that claims the nausea and vomiting of pregnancy is entirely a neurologic condition. I feel a case of serious nausea and vomiting of pregnancy, after the ordinary means have been tried at home, such as a high carbohydrate diet every two hours regardless of whether the patient vomits or not, rectal fluids and so on, things that can be done at home with the possible addition of corpus luteum, which for some reason or other does seem to help a certain percentage of these cases, I think after this has been done the patient is distinctly a hospital case. I feel that we get perhaps as much benefit from the transference of the patient from her ordinary surroundings into the hospital atmosphere as we do possibly from the treatment of the patient. Of course, we all believe in giving intravenous glucose perhaps with the addition of insulin and so on.

In the treatment of the posterior position one of the most serious and annoying things that we have to deal with in pregnancy, I feel of course that the question of diagnosis is all-important. That has to be made first. I will not take issue with Dr. Tew on the question of whether or not we wish to rotate the head. I will call attention to the fact that it can be done beautifully by the Bill maneuver, which is a modified Scanzoni, provided you push the head out of the pelvis. Before you attempt the rotation make the fulcrum of the rotation at the head and not at the forceps handle. In other words, the forceps handle should be swung in a wide arc and not simply turned this way.

Dr. R. S. Siddall (Detroit): I think discussing the whole of Dr. Tew's paper is too much. Personally I was interested in one particular part, that is, the treatment of placenta praevia. To me it seems that caesarean section is too radical a procedure for the treatment of placenta praevia. I was trained to treat placenta praevia conservatively. Apparently from statistics and from what I have observed the only advantage in caesarean section in placenta praevia is the fact that we get more live babies. However, it is known that unless the pregnancy is near term our chance of saving the baby is very slight because of the prematurity. As a matter of fact, statistics will show a slightly better result for the baby with caesarean section in placenta praevia but the difference is so slight that to my mind we are not justified in subjecting the mother to the additional risk of caesarean section for the slight improvement in fetal mortality.

The only other advantage that I can imagine is that it gives us the quickest delivery. However, in severe placenta praevia it does not do the thing that we wish, in certain cases. In other words, although it gives the quickest delivery it does not give the quickest way of controlling hemorrhage. The quickest way to control the hemorrhage is one which can be taken up immediately upon the admission of the patient to the hospital, that is, assuming of course that the patient has lost blood, and that is the use of the bag, or in case a bag is not available, a version—a Bryson-Hicks version—or if it is at home and you do not want to do a version a tamponade of the cervix lower uterine segment will control the hemorrhage very well. Incidentally, according to some European statistics it gives very good results as a treatment of placenta praevia.

One of the great objections, I think, to using caesarean section in placenta praevia is that, necessarily, for a diagnosis the patient must have

been subjected to at least one vaginal examination which certainly, in the case of the sagittal section makes the procedure extremely dangerous. In the case of the low section delivery by this method would not be so dangerous but still the low section seems to be subject to the same dangers as the sagittal section although in a lesser degree. Of course, then there is the other side of the question, a woman who has been subjected to a section is subject to later dangers also. There is the danger of rupture in subsequent pregnancy, as well as the fact that when you have once done a section you do not necessarily have to do another section, still it amounts to practically that.

REPLY TO DISCUSSION

Dr. W. P. Tew (London, Canada): Dr. Seeley's point on the mental attitude of the patient in all toxemias, I think, was a very good point. There is no doubt but what the mental attitude of the patient, to begin with, has a very important bearing upon the treatment of the patient. If the patient starts in with the wrong mental attitude you are going to meet with considerable difficulty until you change the mental attitude of the patient. It comes down to a psychical treatment of the patient. Those patients probably form some of our most difficult and trying cases. Dr. Seeley also mentioned the occipito-posterior position using certain type of forceps, pushing the head out of the pelvis and then rotating. I would like to ask Dr. Seeley what forceps he uses for rotating the head after having pushed it out of the pelvis?

Dr. Seeley: I use the Lee modification of Simpson forceps for all forceps cases.

Dr. Tew: I was wondering if you were using the Kielland forceps. I think his procedure is a very good procedure for those who are accustomed to doing it. I like to rotate the head, if possible, with my hand so that I can feel with my hand better what I am doing than I can at the end of the forceps. When I know the head is in proper position then I apply the forceps and I am willing to pull, after having gotten the head in proper position. I think Dr. Seeley's maneuver is a very splendid one for those who are accustomed to the feel at the end of the forceps and know what they are doing. Dr. Siddall mentioned the treatment of placenta praevia. It is rather pleasing to see that we still have some who are adhering to the orthodox and splendid old teaching of the treatment of caesarean section. At the same time I really believe we must be willing to accept certain other methods if we think we are getting better results.

First of all I would like to say that we must divide the placenta praevia cases into their proper categories before we outline a treatment. I am only advocating caesarean section for all cases of central placenta praevia, after having diagnosed them and they are reasonably clean.

For marginal or lateral cases, I think the orthodox method is a splendid method for rather unclean cases. But, I would prefer even there caesarean section because what do you do? You turn the baby and bring it down and the baby acts as a plug. Naturally we are going to meet with a higher fetal mortality and save more mothers. I think with caesarean section for that case we will save more babies and save more mothers.

Dr. Siddall mentioned the so-called "once caesarean always caesarean." I believe, Dr. Siddall,

we are coming to this conclusion; that if the first caesarean is well done and you have a nice, clean scar, that that scar is almost, as healthy, as a normal uterus. I am just speaking of the normal, clean case, and certainly "once caesarean, always caesarean section" doesn't necessarily have to apply.

Dr. Best asked the question of whether I have had experience with the use of magnesium sulphate in eclampsia. I have had no experience with it whatsoever. I have read something of the literature on that but I would rather not answer the question.

ACUTE SANTONINE POISONING FROM WORM POWDERS— REPORT OF CASE

WILLIAM B. NEWTON, M. D.
ALPENA, MICHIGAN

To the physician practicing ophthalmology, cases involving lesions or affections of the visual track due to poisons, are not rare. The effects of methyl-alcohol, tobacco, quinine and other drugs and poisons, when taken in excessive doses or over a too prolonged length of time, is quite well known.

Quite recently we saw a case of acute poisoning which was undoubtedly caused by the prolonged administration of a well known patent nostrum, "Fields Anti-bilious Worm Powders", and which, we think, was correctly diagnosed as an acute santonine poisoning.

History—Norma M., age five years, was referred to us by her family physician for an examination of her eyes, with the statement from her physician that he had first seen her on the day previous and that he thought that she was almost blind.

Patient appeared to be a healthy looking, robust child. Past history negative as to eye trouble. Had a light case of measles five months previous, recovery uneventful, no complications. Patient gave a history of headaches and drowsiness during the past week with frequent attacks of nausea and occasional vomiting. Parents stated that some two months ago the child began to be quite restless at night, groaning and grinding her teeth and that some of the neighbors told them that the child had worms and acting upon this advice they procured some worm powders and began giving these to the child in full doses, twice a week, for a period of some five or six weeks. No laxative was given following the worm powders. Parents stated, that for about a week they had noticed that the child had acted queerly, seemed to grope around when looking for objects around the house; they had also noticed some muscular twitching of the face and limbs but supposed this was due to worms. Patient had presented several slight convulsive attacks, followed by nausea. Bowels had been slightly constipated. Parents history negative.

Examination—A robust child, skin slightly pale with distinct bluish tinge around the eyes. Patient appeared quite nervous and ill at ease.

Slight muscular twitchings about face and extremities were noticeable. Pupils were markedly dilated and did not respond to light stimulus. There was a rolling of the eyes, fixation was impossible, light perception was barely present, no vision for objects or shadows. Slight rigidity of the muscles of the back. All reflexes were exaggerated. Confused mentality, speech and thought somewhat rambling. Urine quite yellow in color, SP. GR. 1026, sugar or albumin not found. Temperature normal. Ophthalmoscopic findings were as follows: Pupils dilated, media clear. There was an intense hyperemia of the entire retina. The retinal veins were engorged and seemed dilated to almost twice the normal size, the arteries appeared quite small. The optic disc was badly blurred, margins obliterated and the whole structure markedly elevated, giving typical picture of an acute papillitis.

Treatment—Free catharsis, diuresis and diaphoresis for the first week, during which time the patient showed a marked improvement. The muscular twitchings abated, the pupils began to contract, the nausea ceased and there was a marked improvement in the hyperemic retina. The disc margins became visible and the child was able to see large objects around the room and could count fingers at six inches. During the second and third weeks the child was up and around the house and free catharsis and diuresis was maintained and diaphoresis was instituted for an hour each day. Vision continued to improve and the fundus cleared rapidly, the pupils contracted almost to normal size and responded freely to stimuli. Vision at end of third week 10/200. We then refracted the patient under atropine and found an error of two and one-half diopters hyperopia and correcting lenses were given which improved her vision to 20/200. At present, six weeks after we first saw her, her vision is 20/200, the fundus presents a slight hyperemia, the retinal veins are slightly engorged and the discs are clear.

The patient shows a steady slight gain in vision, but what the ultimate outcome will be, only time will tell.

NEW SMALLPOX IMMUNITY TEST

A new test for determining whether or not a person is susceptible to smallpox has been devised by Dr. Sanford B. Hooker of the Evans Memorial for Clinical Research and Preventive Medicine, Boston. Determining whether or not a vaccination, and especially a revaccination, has been a "take" is often difficult. The uncertainty and delay thus occasioned can be largely avoided by the use of the new test which is a control that tests the success of vaccination but does not take

its place. The new control test consists of an injection into the skin tissue of heat-killed, diluted virus, instead of an epidermal insertion of living virus. In addition to making it easier to determine immunity generally, the new test provides a safe method of determining the immunity status of persons afflicted with certain skin diseases or of persons who might be inconvenienced at the time by the development of vaccinia following the test with living virus.—Science Service.

TREATMENT OF MENINGOCOCCUS MENINGITIS*

A. LEVINSON, M. D.**
CHICAGO, ILLINOIS

In the present state of our knowledge we are aware of but one type of meningitis that presents a hopeful prognosis, namely, the meningococcus type. Statistics from all over the world indicate that the mortality in meningococcus meningitis has been reduced from 75% to 25% since the introduction of the specific serum. However, the serum treatment depends upon the early recognition of the disease and its proper treatment.

The first prerequisite for the successful treatment of meningitis depends upon the recognition of the disease clinically. Headache, redigity of the neck, Kernig, Babinski and Brudzinski signs are the classical symptoms of meningitis. Cases occur, however, in which these signs are present and no meningitis exists. Cases of this type Dupre has termed meningism or meningismus. One should, however, not be hasty in designating a case as meningismus unless he has proven it clinically or by means of a cerebro-spinal fluid examination. The cerebro-spinal fluid findings if properly interpreted help to establish the diagnosis.

The fluid in meningococcus meningitis is usually turbid. It shows a sediment or pellicle formation on standing. There is an increase in the number of cells which consists principally of polymorphonuclear leucocytes and some endothelial cells. There is an increased amount of protein and a decreased amount of sugar. Above all there are gram-negative cocci in the smear and in the culture.

The treatment of meningococcus meningitis may be divided into three parts: (1) Specific treatment with serum; (2) Symptomatic treatment; (3) General management.

SERUM TREATMENT

A spinal puncture should be done on every case presenting meningeal symptoms, and serum should be at hand before the puncture is done. A needle with a fairly large bore 22 to 20 gauge should be used, a smaller aperture often becoming clogged, if the fluid is thick. The gravity apparatus should be examined to make certain that the tip fits the needle, otherwise an adapter should be used.

The serum should be warmed to room temperature. The gravity apparatus

should be attached and the serum allowed to run in slowly. The principle of diphtheria antitoxin should be followed in the administration of anti-meningococcus serum namely: large doses should be given as early as possible in the disease. Thirty cc. should be given as the initial dose, and the dose should be repeated every twelve hours until the cerebrospinal fluid is clear and the temperature is down. Arbitrarily, 120 cc. of serum should be given regardless of the cerebrospinal fluid changes.

If no cerebrospinal fluid can be obtained or if no serum can be injected by the lumbar route, a cistern puncture should be done. In infants, however, ventricular puncture is to be preferred to a cistern puncture. In the presence of meningococcemia, evidenced by purpura or arthritis, serum should be given intravenously in addition to subdurally.

As soon as the meningococcus is obtained in the culture from the cerebrospinal fluid, the serum should be tested for its ability to agglutinate the organism. During the war, there was a group of cases in France that did not get well after serum was administered, and it was found that the reason was that the serum used did not agglutinate the type of organism that caused the disease.

SYMPTOMATIC TREATMENT

In case of shock after the removal of cerebrospinal fluid or injection of serum, adrenalin or atropine should be given hypodermically. It usually requires rather large doses, the average dose of adrenalin for infants being 6 to 10 minims, and of atropine, 1/300 grain. In beginning edema of the lung, heroic doses of atropin have been found useful.

For twitching or convulsions, large doses of bromides or chloral hydrate should be given. I believe that opiates are not to be recommended in cases of increased intracerebral pressure unless other sedatives fail to quiet the patient. Sometimes cardiac

* Paper read before the Jackson County Medical Society, March 19, 1929.

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and respiratory stimulants are indicated. Caffeine and aromatic spirits of ammonia have been found effective for the purpose.

Headache, which is a cardinal symptom of meningitis is best relieved by the withdrawal of cerebrospinal fluid. Cold applications also afford some relief. Constipation which is one of the accompanying symptoms of the disease should be counteracted by means of a saline cathartic.

Herpes labialis is frequent in the suppurative forms of meningitis and may be annoying to the patient. The application of vaseline or cold cream usually suffices to allay the irritation which generally subsides within a few days. In arthritis complicating meningococcus meningitis, salicylates may be given, though they are usually of no avail. For conjunctivitis, atropin may be used locally.

GENERAL TREATMENT

Isolation: Meningococcus meningitis is an infectious disease which at times becomes epidemic. However, whether the

disease is epidemic or endemic, the patient should be isolated and precautions should be taken to prevent its spread. Most hospitals admit cases of meningococcus meningitis into special meningitis wards or in private rooms with special nurses.

Complete Rest: Every nervous disease requires rest, meningitis particularly. A quiet, well-ventilated room should be provided for the patient.

Food: Nourishment should be given in all stages of the disease. A soft diet is to be recommended as in any other infectious disease. Concentrated high caloric food should be the rule. If no food can be given by mouth, because of vomiting or because the patient is in coma, gavage or rectal feeding may have to be resorted to. This may be especially necessary in the later stages of the disease. Ten per cent glucose may be given intramuscularly to advantage if the patient refuses food.

Blood transfusion may be given advantageously in severe cases.

CANCER RESEARCH MAY FOLLOW FOUR LINES, COMMITTEE FOUND

In a report never before made public, the subcommittee on cancer research, appointed by the conference of consultants called by the Surgeon-General of the U. S. Public Health Service, suggested that the Public Health Service could carry on cancer research along four lines: statistical study, study of occupational cancer, study of the general biochemistry of the cell, and study of various phases of radiation. This is the report which Senator Wesley Jones, chairman of the Senate Commerce Committee and its new cancer subcommittee, has mailed to scientists throughout the country in order to get their opinions. Later it will be discussed at the hearings of the cancer subcommittee.

"The United States was the first government to publish a statistical volume on the mortality from cancer," stated the report. This volume gives all the facts obtainable from the census records up to 1914. It should now be complemented by another volume covering the time since 1914, the committee advised. The study of occupational cancer cannot be carried on by private institutions so well as by the government, because the material is so widely scattered.

"For example, we know but little of the cancers of tar workers in the United States," stated the report, "of the occurrence of cancer in garage workers, whose hands are continually in contact with oils; of the spatterburn cancers seen in workers in the steel mills; of brass and dye workers' cancer. If the widely scattered information concerning these types of cancer could be collected and studied, facts important both to the problem of the causation of cancer and to industry would be immediately obtainable."

More fundamental researches on the general biochemistry of the cell which might be carried out in existing laboratories were summarized as follows:

"Tissue cultures offer one method of approaching this problem. We still lack information as to the difference between the cancer cell and the normal cell. If cancer cells and normal cells can be grown continuously in culture and the difference noted between the two, either in morphology or in response to radiation, or to physical or chemical agents, it might lead to the discovery of methods, chemo-therapeutic or other, which would damage the cancer cells and leave healthy cells untouched. If this happy discovery could be made we would be approaching a cure for cancer. Similar general biological work should be encouraged at institutes like the Marine Biological Laboratories at Woods Hole, which would lead to greater knowledge of the cause of growth and death of cells. Any investigation of this type may well be expected to throw light upon the cancer problem which is largely an understanding of the uncontrollable growth of certain groups of cells in the human body.

"There are many other problems of the greatest importance still unsolved," the report continued. "Among these are the standardization of the measurement of X-ray and radium radiation by a single standard unit. Also the study of methods of measurement of radiation of longer wave lengths than X-ray, from the ultra-violet to the electro magnetic groups with an investigation of their biological effects."—Science Service.

MICHIGAN'S DEPARTMENT OF HEALTH

GUY L. KIEFER, M. D., Commissioner
LANSING, MICHIGAN

INDUSTRIAL HEALTH CONSERVATION

A survey of the health departments now established by many of the larger and medium sized industries in the state, convinces one of the increasingly favorable attitude toward all measures, promoted by the firms themselves or by community agencies, for safeguarding or improving the health of the workers. Conservation of the health of industrial workers is no longer looked upon as an experiment or a fad but is today recognized by both employers and employees as of the utmost importance. The employee realizes that it means a higher physical tone, less time lost through illness or disability, better working conditions and a greater income. To the employer it means increased production, lessened labor turnover, a mutual understanding, greater loyalty and improved morale on the part of employees.

While industrial health work was at first limited largely to first aid in injuries and reduction of health hazards, it is now conceded that it should include all matters and conditions which conduce to the physical, mental and also the moral welfare of the employee during working hours.

Industry, recognizing that the physical condition of the human element is a prime factor in production, has gone far in helping to solve the problem of the health and efficiency of the worker. Many industries now include illness as a factor to be reckoned with in their safety work, since they find that a large percentage of accidents are the result of abnormal health conditions. They reason that the greatest single cause of accidents is carelessness, and that the principal causes of carelessness are worry and illness. So, to prevent these causes they must help to remedy conditions outside their boundaries.

Statistical records of disablement of workers show a tremendous loss. Naturally, accident prevention and care first demanded industry's attention; it found that many poisonous substances used and many modern processes carried new elements of danger; it studied the effects of fatigue and its relationship to production, also the relationship of accident frequency to health. It found that illness causes from eight to ten times as much absenteeism as accidents; that wage earners lose an average of six to nine days each year

on account of sickness. This translated into dollars for loss of wages and loss in production, to say nothing of lessened efficiency, proves it to be a tremendous economic problem, running into millions annually. Close analyses have shown that nearly half of this disability is preventable.

During the last fifteen years many industries have established extensive health departments. The scope of their work has changed greatly in recent years, becoming more inclusive, until it is now the policy of some larger establishments to extend their health department's supervision, through the plant physician, to the matter of plant hygiene and sanitation, general welfare and health education. They have discovered that industrial hygiene or health supervision does not stop at the door of the work shop but touches home and community interests.

It is our progressive leaders in industrial and mercantile pursuits who have recognized the question of economics involved in the health conditions of employees and have done great pioneer work on this problem. We believe that the available knowledge and experience, particularly from those establishments that have sensed the importance of competent industrial health and medical service, should be gathered by the State and various welfare agencies and be put to practical use throughout our extensive industrial field, much of which now knows little about the subject, and practices less.

The most important features of industrial hygiene, as now conducted, that aid or contribute to public health, are physical examination of all applicants for employment, the removal or correction of remedial defects, the mental and physical "adjustment of the man to his job," the prevention or control of communicable diseases, the establishing of plant nursing service, instruction of individual health care, the keeping of records and reporting of accidents and illnesses, and cooperating with family physicians, dentists, and local health officials in maintaining health.

One of the interesting and profitable features of the health survey in industries conducted by the Michigan Department of Health is the discussion with plant officials and executives in the medical and welfare service of the relative merits of certain

definite objectives of a health department to discover how near industrial plants are approximating them and to note results of their actual experience.

The following definite objectives, as recommended by the Commissioner of Health * (Jour. A. P. H. A., December, 1924, by Dr. Guy L. Kiefer) were presented as some special functions of an Industrial Health Department.

1. The physical examination of all applicants for employment and of workers returning after illness.

2. The periodic re-examination of all employes; more frequent attention to those who have physical defects that need following up.

3. The examination of any and all employees who may be indisposed, for the purpose of diagnosis and advice.

4. The examination, upon request, of all employees who may be under the care of an outside physician, for purposes of co-operation and consultation.

5. The surgical care, as far as possible, of all company accident cases.

6. General health education by means of literature, posters, bulletins, lectures, etc.

7. Instruction on mouth hygiene and care of the teeth.

8. General supervision of plant sanitation, heating, food inspection, etc.

9. Investigation, by nurses, at the homes of all sick cases, and general nursing advice, as far as possible, of all such cases.

The relative importance of these producers is found to vary in different types of industries and under different conditions. In several larger plants with well developed departments they have been much expanded.

The universally favorable attitude of industries toward this nature of the health department's service is evidenced in the very cordial reception accorded by the officials of the establishments visited in the survey. There is special significance in their expressions of pride in their accomplishments and the contemplated improvements in their health departments; their eagerness for suggestions, and their ready, helpful recommendations. In almost every plant there are plans to extend the health service, none having any desire to discontinue or even curtail it. F. A. P.

GERMANY APPROVES TOXIN-ANTITOXIN

Under the heading, "German Physicians Approve Vaccination," a brief news item

from Essen, Germany, dated June 26 and sent out by the Associated Press reads:

"German physicians in their 48th annual meeting Wednesday approved the American method of diphtheria protective vaccination, which was used during 1928 for 100,000 Berlin school children."

The acceptance of toxin-antitoxin immunization by the German medical profession is indeed a triumph for American medicine. Toxin-antitoxin is distinctly an American product. Dr. William H. Park of New York, Dr. E. M. Houghton of Detroit, and several other men in the biological field did the pioneering work. As is so often the case, the final result was the composite of the work of many men, but they were American men.

Toxin-antitoxin has now been used to immunize approximately one million children in Michigan. Many other states have given similar amounts. The 1921 diphtheria cases in Michigan totalled 12,075, with 954 deaths. At that time the free distribution of biologic products for the prevention of diphtheria began. The 1928 records showed only 3,729 cases and 385 deaths.

The change in diphtheria rates after the use of toxin-antitoxin is so striking that it is attracting the attention of the world, as a distinctly American contribution to the welfare of mankind.

D. M. G.

CANINE SELF DEFENSE ILLEGAL

The Supreme Court in a recent decision was held that a dog does not have a right to defend itself by biting, even though stepped on by a person.

This interesting case has direct bearing on the spread of rabies. The facts were that a person accidentally stepped on a dog that was minding its own business, and the dog in turn bit the party who stepped on it. The party who was bitten asked damages of the owner of the dog. The dog owner claimed that the dog had been assaulted and had a right to defend itself in a truly canine way.

These two differences of opinion were taken to the Circuit Court and later to the Supreme Court. The majority of opinion of the State Supreme Court was to the effect that the law of canine self defense does not relieve the owner of the liability for injury to the person who inadvertently steps on the dog.

Experience in many places is to the effect that the occurrence of rabies in dogs

who receive the inoculation of canine antirabic virus is very small as compared to that in dogs that have not been so treated.

Meningitis cases reported from January 1, 1929, to June 25, 1929, total 1,321. This is in contrast to the 276 cases occurring during 1928, and the average of 156 cases for the past five years.

Deaths from this disease up to May 1, 1929, reached 330. Four counties, Saginaw, Genesee, Oakland and Wayne, have reported by far the larger percentage of the cases. With the exception of Muskegon and Ingham, no other counties seem to have suffered greatly. It is hoped that the warmer weather may result in a decreased incidence of the disease.

D. M. G.

"The most difficult problem of a diphtheria immunization campaign is that related to immunization of the pre-school child," writes Dr. S. J. Crumbine, field secretary of the conference of State and Provincial Health Authorities of North America, and Director of the American Child Health Association, in the news bulletin of the Conference. Dr. Crumbine was commenting on the recently adopted plan of the Michigan Department of Health for securing immunization of pre-school age children through the family physicians. He concludes, "Particularly important and desirable is the plan of making an effort to secure the co-operation of the physicians of the state as indicated by the letter addressed to the doctor."

ENGINEERING NEWS

The summer program of testing highway water supplies and posting the safe sources was practically completed by the middle of July. All of the completed trunk lines of the state were covered, and in addition some of the main county roads, especially those leading to the larger resorts. There was an increase of about 200 samples this year over last year, the same increase that was shown last year over the year before. The percentage of safety has also increased, though the final compilation has not yet been made. The number of Upper Peninsula samples examined was twice as high as ever before.

The new water supply and sewerage system for Camp Grayling, construction of which was supervised by the Bureau of Engineering, has been finished. Chlorination of the mains was the final step. This gives to the camp complete and up-to-date sanitary facilities.

Six representatives of the Bureau of Engineering are working on resort inspection, each one assigned to a district. There are seven fundamental requirements upon which the resorts are rated, a safe water supply, sanitary toilet facilities with proper sewage disposal, satisfactory disposal of garbage, a sanitary milk supply preferably from tuberculin tested cattle, clean grounds reasonably free from flies and mosquitoes and with proper rubbish disposal, cleanliness of food handled and of food utensils, and clean and adequate bathing facilities.

Through special arrangement with the Department of Agriculture, more careful attention will be paid to milk supplies than has been possible in previous years.

Detailed plans are now being drawn up for im-

proved sewage disposal systems at the state institutions. Surveys upon which the plans are based have been completed. This activity is a part of the state program of stream pollution control.

E. D. R.

CHILD HYGIENE

The maternal mortality study that has been carried on for the past two years has been completed, with the exception of the cases that may be queried by the Federal Census bureau.

Demonstration programs in prenatal nursing are being carried on by nurses from the Bureau of Child Hygiene and Public Health Nursing in three counties, Clinton, Ingham and Ottawa.

Breast feeding surveys are in progress in four counties, Cheboygan, Dickinson, Gladwin, and Gogebic. These, also, are being carried on by department nurses.

PREVALENCE OF DISEASE

	June Report			
	Cases Reported			
	May 1929	June 1929	June 1928	Average 5 yrs.
Pneumonia	727	488	453	392
Tuberculosis	688	555	554	528
Typhoid Fever	19	15	22	33
Diphtheria	393	402	332	352
Whooping Cough	1,157	782	658	528
Scarlet Fever	2,044	1,323	941	994
Measles	4,271	2,752	3,712	2,670
Smallpox	223	286	223	244
Meningitis	367	287	28	17
Poliomyelitis	4	5	3	3
Syphilis	1,415	1,396	1,563	1,318
Gonorrhea	719	766	981	869
Chancroid	27	42	7	9

CONDENSED MONTHLY REPORT

Michigan Department of Health Laboratories

Lansing Laboratory—	+	—	+—	Total
Throat Swabs for Diphtheria				1149
Diagnosis	36	355		
Release	103	98		
Carrier	7	525		
Virulence Tests	16	9		
Throat Swabs for Hemolytic Streptococci				764
Diagnosis	100	135		
Carrier	55	477		
Throat Swabs for Vincents	48	341		389
Syphilis				9234
Kahn	1497	7617	114	
Wassermann		2		
Darkfield	1	3		
Examination for Gonococci	169	1317		1486
B. Tuberculosis				587
Sputum	73	474		
Animal Inoculations	5	35		
Typhoid				208
Feces	3	60		
Blood Cultures		66		
Widals	2	68		
Urine	1	8		
B. Abortus	5	53		58
Dysentery	2	34		36
Intestinal Parasites				9
Transudates and Exudates				583
Blood Examinations (not classified)				154
Urine Examinations (not classified)				419

Water and Sewage Exam- inations	1220
Milk Examinations	129
Toxicological Examinations	2
Autogenous Vaccines	231
Supplementary Examina- tions	643
Unclassified Examinations	17304
Total for the Month	186053
Cumulative Total (Fiscal year)	2649
Increase over this month last year	1759
Houghton Laboratory— Examinations made — Total for the Month	19300
Cumulative Total (Fiscal year)	434
Increase over this month last year	6548
Grand Rapids Laboratory— Examinations made — Total for the Month	79969
Cumulative Total (Fiscal year)	335
Increase over this month last year	991
Typhoid Vaccine Distributed, c.c.	17217000
Diphtheria Antitoxin Distrib- uted, units	9640
Diphtheria Toxin Antitoxin Distributed, c.c.	8316
Silver Nitrate Ampules Dis- tributed	36
Scarlet Fever Antitoxin Dis- tributed, Pkg.	1260
Scarlet Fever Toxin Dick Test Distributed(c.c.	1092
Scarlet Fever Toxin Immuni- zation Distributed	2990
Smallpox Vaccine Distributed, points	1220
Bacteriophage Distributed, c.c.	

GIANT APPENDIX WEIGHING ONE POUND SIX OUNCES

The appendix in the case reported by E. Dunbar Newell, Earl Campbell and J. Marsh Frere, Chattanooga, Tenn., an enormous pear-shaped cystic mass, measured 7 by 8 by 16 cm. and weighed 659 Gm. The lumen at the site of removal from the intestine was 3 cm. in diameter. No acute inflammation was seen and the lumen was open from end to end, neither stricture nor stenosis being present. Microscopic examination revealed a thick dense wall composed entirely of fibrous tissue. No lining membrane was found, and only a flat, scant, serous coat was present. A diagnosis of mucoid cyst of the appendix was made.—*Journal A. M. A.*

EXTENDING THE SERVICE LINE

(Wisconsin Medical Journal)

With the development of "bigger and better" organizations in the industrial world of America, a great premium is being put on "executive capacity" of the managers of the enterprises. Roughly defined, executive capacity consists in the ability, on the part of its possessor, to forego doing anything he can get another to do approximately as well as he can himself.

The logical demands of—and our own pretensions in—the practise of modern medicine call for a larger exhibition of executive capacity on the part of its practitioners. Doctors must learn to do fewer things and direct more. Otherwise it is

inconceivable that we shall ever catch up in the utilization of our present vast store of available knowledge.

It is many years since doctors transferred many of the functions incidental to the care of the sick to trained nurses. Many of the laboratory procedures are now done as well as, or better, by single-minded technicians. Many more transfers must be negotiated to free medical men of petty detail and to clear the paths for very important steps in case handling, now crowded out.

Cabot many years ago made a very clear case for "hospital social service" as an adjuvant of the conventional treatment given by doctors and sick room nurses. He carried much more conviction to nurses and social workers than to physicians who, presumably, should have been able to understand him better. The writer will send a carton of cigarets to the reader who offers the best explanation of why practising physicians gave Cabot the icy stare.—H. E. D.

CLEVELAND CLINIC FAMOUS FOR RESEARCH ON BIPOLAR THEORY

The Cleveland Clinic Foundation, which was wrecked by fire and explosion on May 15, was the site where part of the research work was done that resulted in Dr. George W. Crile's famous bipolar theory of living processes. To the layman, Dr. Crile is perhaps best known as a leading surgeon whose treatment of goiter has been strikingly successful. To the scientist Dr. Crile is known for his theory of the electrical nature of all living processes. It is an electric force that builds up and maintains the form and structure of all living cells, Dr. Crile has concluded from his investigations.

The famous goiter treatment which has restored thousands to helpful, happy lives, developed as a side issue of the research into the nature of life which Dr. Crile has conducted since 1898. The impetus for this study arose when Dr. Crile as a medical student saw, for the first time, a patient die whose organs were sound, who had not lost any large amount of blood, but who was a victim of what is known as surgical shock. Shock in this case resulted from an accident, but it also follows surgical operations and is one prominent cause of death after operations. Dr. Crile has practically eliminated surgical shock by his pre-operative treatment of his patients. The consequent exceedingly low mortality after his operations has made him famous. Besides eliminating danger, his treatment makes the operation much less of an ordeal for the patients, many of whom awake from a peaceful sleep to find that the dreaded operation is all over, and that convalescence is easy. By inducing a cheerful frame of mind in the patients, using a mild sedative before operation and an odorless non-suffocating anesthetic, and by using local anesthetics on all sensitive tissues before cutting them, Dr. Crile has achieved his remarkable results.

Starting as a medical student on a life-long search for the underlying causes of fatigue, exhaustion and death, Dr. Crile found that "to understand the nature of exhaustion and death, it was necessary first to understand the nature of life itself." His work, pursued in London, Cleveland and the war hospitals in France, included studies of the circulation and respiration, of blood chemistry, of cells, and of biophysics. It resulted in his theory of the electrical nature of life.—*Science Service.*

THE JOURNAL

OF THE

Michigan State Medical Society

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Contributors are responsible for all statements, conclusions and methods in presenting their subjects. Their views may or may not be in agreement with those of the editor. The aim, however, is to allow authors as great latitude as the general policy of The Journal and the demands on its space may permit. The right to reduce in length or to reject any article is reserved. Articles are accepted for publication on condition that they are contributed solely to this Journal.

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AUGUST, 1929

"I hold every man a debtor to his profession, from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavor themselves, by way of amends, to be a help and ornament thereunto."

—Francis Bacon.

EDITORIAL

OLD AGE

The phases of human life constitute a subject which has aroused the attention of man for ages. It is incomprehensible to him why so elaborate and meticulous a being should evolve with such purpose and completeness to a stage approximating perfection only to disintegrate and finally decay. The terminal stages of life in particular are least understandable since it is then that the teleological aspect of life is less apparent. Accordingly various views on old age have gained popular credence. Foremost among these is the idea that old age may be forestalled. A number of scientific and medical men (Metchnikoff, Horsley, Voronoff and Steinach, among others) have supported this attitude, in most cases with less scientific evidence than sanguine reliance upon their own preconceptions.

It is quite evident that the old person differs in physique, functional activity, mentality, and outlook from the younger individual, and it is particularly gratifying to meet with a thoughtful work on senescence in which the author is constantly aware of these differences. Professor Warthin's recent work on old age* deals with the problem from the standpoint of a professional pathologist.

The theme of the work is bound up in a conception that life is a sequence of three fundamental stages—evolution, maturity, involution—the limits of which are predetermined by the hereditary organization of the individual. The first stage is characterized by a series of growth and developmental sequences which result in the formation of the mature individual from a fertilized egg. "After birth the human infant passes its first months of life in a more or less vegetative state, then through a purely animal period followed by successive stages of mentality imitating in many ways the cerebral phenomena of primitive races. Then follows the rapidly ascending curve of mental development . . . to the more serious preparatory and early working period of the age of puberty." As the individual reaches maturity "growth is reduced to the minimum of necessary tissue restoration, which tissue increase slows gradually until it ceases." There are however minor growth changes in the heart, bones, panicle and musculature during the period of maturity. At this period both sexes "are now prepared for the consummation of their greatest function, the propagation of their race."

During the premature and mature periods of life, progressive growth is not the only mechanism of development. "Involution is as necessary as growth in the complete building plan of the animal organism." Certain organs serve a period of usefulness during a part of the growth stages of the individual only to undergo regression when they are no longer useful. Among the organs which undergo such involution are the gill slits, notochord, Wolffian body, chorionic vesicles, lanugo, umbilical cord, urachus, ductus arteriosus, milk teeth, and thymus. "Throughout the whole period of growth up to maturity the progress of the individual life consists of an interlocking of growth processes and involution processes, all of which are necessary to complete development. The

* *Ald Age, the Major Involution, the physiology and pathology of the aging process* by Aldred Scott Warthin. 199 pages. 29 illustrations. Paul H. Hoeber, New York.

essential tissue changes of all these developmental involutions are parenchymatous atrophy and degeneration with vascular obliteration and sclerosis. . . . They are identical in kind with the tissue changes of the major involution which we call old age." In all cases they represent the regression of parts of the body which have filled their purpose. "Involution means fulfillment of purpose and takes place only when this end has been accomplished."

Likewise when the individual has fulfilled his purpose to the race, when he has propagated and assured his progeny of survival to a mature stage, he has become biologically useless "and he disappears from the scene by the gradual fading away process of senescence. Senescence is . . . a gradually developing complex, or syndrome, of organ involutions and tissue involutions" evidenced "histologically by well defined tissue lesions and manifested clinically by descending functional curves."

The functional changes of senescence (to which Warthin gives particular attention) affect all of the body systems. The reproductive capacity shows generalized regressive changes, height and weight decrease, the bones and joints become less efficient, blood vessels and cartilages calcify, lymphoid tissues become atrophic, sight and hearing become dim, the circulation rate drops and becomes irregular, and urinary function is disturbed. These changes however do not occur simultaneously but in varying order. Definite disease processes frequently complicate the general physical involution and lead to death.

The process of aging, the generalized inevitable involution, presents a dreary and foreboding picture to the individual who begins to realize that he too must be its subject. The period of this realization is a crisis for many people who lack an adequate philosophical attitude, who become disillusioned and despondent as old age creeps upon them, or who deny the obviousness of old age changes. "Fortunately, the cerebral functions have not yet completed their possibilities of development at the beginning of senescence and these may continue an ascending curve for perhaps twenty or more years after the first signs of senescence, until senility is well established. Mental and spiritual evolution is thus assured to the senescent individual while other functions are weakening. . . ."

GENIUS

A recent announcement by Thomas Edison that he intends to initiate a nation wide search for a boy of sufficient promise of genius to carry on the work of the East Orange Laboratories has brought forth speculation as to the method of apprehension of the potential genius. Several eminent psychologists have expressed their views on the selection of potential genius, each suggesting that candidates be subjected to eliminate intelligence tests and that the ten or more boys who rate highest be given educational advantages which will bring out the characteristics of genius which Edison desires in his successor.

Although the education of a capable boy is not to be discouraged the likelihood of developing a genius-successor to Edison is small. A genius is in reality judged and identified by his past accomplishments rather than, as generally thought, by the possession of certain desirable characteristics. Edison is a survivor of a past era, a period of individual achievement; the big things in modern industrial research are accomplished in group research laboratories rather than by individuals. There is neither need nor desirability in having one man attempt to encompass a whole field.

PHYSIQUE AND DISEASE

Within the past few years physicians have witnessed many changes in method of diagnosis and treatment as well as in attitude toward sick people, but few of these changes are of more general interest than the recent studies on the relation of constitutional body types to disposition to certain disease. A considerable part of the art of medicine, that is, the consideration of individual difference in the diagnosis and treatment of disease, has been concerned with the grouping and comparison of cases. Although such grouping usually pertains to the actual disease condition rather than to the physique of the patient, the writings of prominent clinicians, including such men as Hippocrates, Sydenham, John Hunter, Rostan, and Hutchinson, show evidence of the appreciation of certain of the physical characteristics of the patient which are associated with the predisposition to disease.

The Scotch clinician, Thomas Laycock, was cognizant of the relation between the tendency to disease and the body constitution, and his series of lectures (1862) forms a basis for a modern concept of the

human constitution. He divided men into several groups on the basis of their physical and mental characteristics, pointing out that each class was characterized by specific ailments. Although this work was a real forward step, it did not stimulate other similar studies. It may have been subjected to the same skepticism which was accorded the widely exploited doctrines of phrenology and physiognomy; at any rate the stress given the extrinsic agents of disease by such bacteriologists as Pasteur and Koch rendered the human constitution for the time a minor factor in medical affairs.

During the next fifty years, however, the new sciences of endocrinology, immunology, and genetics had given rise to many new concepts as to the nature of disease. With the change in emphasis on its nature and through the establishment of new technical methods, a number of men, notably de Giovanni, Viola and Pende in Italy, Bauer and Kretschmar in Germany, and Draper, Stockard and Bean in this country, have directed their attention to the clinical application of the classification of constitution. Their work indicates that there are ten or twelve specific constitutions which are of clinical importance. Each type of constitution is associated with a diathesis toward certain diseases. Furthermore, this idea has spread to consideration of individual organs. A stomach having an ulcer in its wall is looked upon not as a previously normal organ now attacked by pathogenic organisms, but as an organ which is morphologically deficient and thus predisposed to a peculiar lesion. Other examples might be mentioned.

The ideal condition for the study of disease is that in which due attention is given to both intrinsic and to extrinsic (bacterial) factors.

THE INTERNATIONAL LIST OF THE CAUSES OF DEATH

W. J. V. DEACON

(Michigan Department of Health)

An interesting old book published more than a century ago by Cullen and entitled "First Lines of the Practice of Physic" makes the statement which is amusing to-day. "The distinction of the genera of diseases, the distinction of the species of each, and often even that of the varieties I hold to be a necessary foundation of every plan of physic, whether dogmatical or empirical."

Looking at this statement from a mod-

ern standpoint it would mean that if you could not name a disease exactly you could not treat it. A good deal of attention was given to the subject of nosology in the early days, but there was no well recognized system by which we could compare the causes of death between one community and another. Dr. William Farr, who is regarded as the father of modern vital statistics and who is responsible for the foundation of the English system in 1837, found that one of his first duties was to prepare a "statistical nosology." Dr. Farr said at that time, "The advantages of a uniform statistical nomenclature, however imperfect, are so obvious that it is surprising no attention has been paid to its enforcement in Bills of Mortality."

"Each disease has in many instances been denoted by three or four terms and each term has been applied to as many different diseases. Vague inconvenient terms have been employed or complications have been registered instead of primary diseases. The nomenclature is of as much importance in this department of inquiry as weights and measures in the physical sciences and should be settled without delay."

The first Statistical Congress to prepare a report on this subject met in Brussels in 1853 and there were several lists attempted and finally at the time of the World's Fair in Chicago the International Institute of Statistics was organized and the first formal international list of the causes of death was prepared. This was revised in 1900, 1909 and in 1920, it being determined that the list should be revised each ten years, preferably on the ninth year in order that the new list might be ready for the new census taken decennially in the United States on the even ten years and in England on the one year.

The American Medical Association was of great assistance in the preparation of these original lists and one of our own Michigan men, Dr. Victor C. Vaughan, was active in the American Medical Association participation in this work. Since 1920 a committee of the American Public Health Association, working jointly with several committees representing foreign countries, have been preparing for the fourth decennial revision which will be made in Paris in October of this year.

There are forty-two countries subscribing to the International Institute of Statistics and the adoption of the standard revision will become effective in all of those countries and probably others as well and

as a result we may compare Michigan statistics with the statistics of Japan or Norway or Italy or New South Wales or almost any other country.

It must be remembered, however, that this list is a list of the causes of death and will not serve as a nomenclature for diseases, as many pathological conditions must necessarily be described which are not in themselves fatal.

Perhaps few physicians realize the influence of the statistical presentation of lists of diseases and of deaths. When a physician is called to see a case he naturally takes into consideration the age and sex of his patient because he well knows the effect of age and sex distribution in certain diseases as well as the seasonal and geographical distribution. If he finds his patient suffering from a rash and the patient is a child, he naturally looks for certain other conditions which will aid his diagnosis, but if the patient is an adult, he is very liable to look for an entirely different set of conditions. Whether he realizes it or not, he is applying that knowledge which has been prepared for him by the study of vital statistics.

The American delegation to the Paris convention will have a meeting in New York during July and will discuss and edit their final report. The delegates to the International Institute of Statistics are appointed by the Secretary of State on formal invitation by the French government and include: Haven Emerson, New York; George H. Van Buren, New York; William H. Guilfoyle, New York; W. J. V. Deacon, Michigan; Jessamine S. Whitney, New York; Emlyn Jones, Pennsylvania; Edgar Sydenstricker, and T. F. Murphy, Wash.

MISLEADING CIGARET ADVERTISING

(Journal Indiana Medical Association)

The food and candy manufacturers are entering a very righteous and just protest against the vicious and misleading cigaret advertising which offers as a slogan, "Reach for a Lucky instead of a sweet." The offending advertising ought to be suppressed in the interests of public health, for the suggestion offered to smoke rather than eat is apt to encourage the harmful use of tobacco and discourage the use of real food. The plea to young women and girls to try to secure or maintain a slim and willowy figure through the use of tobacco also is positively vicious. Furthermore, it is such fool advertising that gives the anti-tobacco societies encouragement to renew their efforts to prohibit the manufacture and sale of tobacco in any form, and if such harmful propaganda is permitted to continue it may be possible that some time in the near future we will be confronted with a proposed amendment to the constitution that will be analagous to the eighteenth amendment, which went over before we hardly knew what was going on.

THE EDITOR'S EASY CHAIR

DISCOVERY OF THE LYMPHATICS

A speaker at the Post-Graduate Clinics held in Detroit in June, referred in his address to the importance of the lymphatics and mentioned the fact that their discovery by Aselli had not received the attention that the importance of the discovery merited. This leads us to say that Aselli's discovery had been largely over-shadowed by Harvey's epoch-making announcement of the circulation of the blood and probably also by the fact that Harvey himself was inclined to discount the work of Aselli as being of minor importance. Vesalius was of course the great anatomist of the Renaissance period. He was followed by a large number who may be designated post-Vesalian anatomists. We have a great many anatomical discoveries during the seventeenth century. It might not be so very rash to say that during the latter half of this century there were a greater number of anatomical discoveries than at any other similar period before or since. The names of these men immediately call to mind many anatomical structures which each anatomist was the first to describe, for it was long a custom to commemorate the discovery by associating the anatomical part with the name of the anatomist who first described it. For instance, we have Malpighi, Bartholinus, Wirsung, Highmore, Pacchioni, Havers, Bruner, Steno, Peyer, DeGraf. Most of these men did their work between 1625 and 1700.

DETAILS OF LIFE MEAGRE

Our first definite knowledge of the lymphatics was the result of the researches of Aselli or Asellius as he was also called. This anatomist was of patrician blood, born in Cremona, Italy in 1581. He studied medicine at Padua as did also Harvey and a number of other noted physicians of the time, and afterwards located in Milan. His discovery of the lymphatics which he called *venae lactae* was made in 1622. For this and other discoveries he was honored by his alma mater in being elected to the Chair of Medicine in Padua in 1624. He died in 1626 at the early age of 45 years. His *De Lactibus* was published a year after his death. He and Harvey were contemporaries. At the time of the discovery of the lymphatics, Harvey was 44 years old.

EARLY ANIMAL EXPERIMENTATION

Aselli tells how he perchance discovered the lymphatic circulation. He was conducting an experiment on a dog for the purpose of demonstrating the recurrent nerves. This was an early instance of vivisection. Watching the movement of the diaphragm on the same animal he observed a number of "white cords" so to speak, scattered over the mesentery and intestines. His first conclusion was to the effect that they were nerves, but a second observation assured him that these "cords" were vastly different from nerves. Pricking one of them with a sharp knife a milk-like liquid spurted forth. He called this to the attention of a number of notable spectators who were witnessing his animal experimentation. Not only did Aselli discover the lymphatic vessels but he also observed the presence of valves in the lymphatics. He was the first to recognize the function of these valves.

It was not, however, until six years later that the lacteals were demonstrated in man. In 1628 a criminal was examined shortly after execution.

PECQUET AND THORACIC DUCT

Aselli's discovery per se was not of capital importance and remained an isolated bit of knowledge for a quarter of a century until Jean Pecquet, a Frenchman, published his *Experimenta Nova Anatomica* in 1651 in which he announced his discovery of the receptacle of chyle and its continuation into the thoracic duct. He described these structures accurately, showing that Aselli's lacteals pour their contents into the receptacle and that the thoracic duct, a continuation, pours its contents into the venous system at the junction of the jugular and subclavian veins. This showed Aselli's discovery in a new light. Harvey's discovery appeared between that of Aselli and Pecquet, as a result Pecquet's discovery was accepted without question. Both Aselli's discovery and that of Pecquet were confirmed by Rudbeck, a Swedish professor of anatomy in 1653.

DEATHS

DR. F. R. ROBSON

On the evening of Friday, May 24, Dr. F. R. Robson of Reading, a well loved and faithful member of Hillsdale County Medical Society, returning late to his home from his office, was stricken by apoplexy and rapidly passed into a deep coma from which he never revived, passing away on May 27 about 2:00 p. m.

Dr. Robson was born at Belleville, Mich., January 11, 1874, and was therefore aged 55 years, 4 months and 16 days. He received his pre-medical schooling at the High School of Belleville after which he was graduated from the Detroit College of Medicine in 1897 followed by a post-graduate course at the Chicago Medical College. After this, he came to Reading, Mich., and opened an office for practice. He soon became widely known as a skillful and conscientious physician. Ever genial, modest and unassuming, he was indeed the "beloved physician" to a vast number of patients and friends, both within and outside of the profession.

He was married June 21, 1910, to Miss Ella Green of Detroit, who with one brother, Edward Robson of Belleville and two nephews, survive him. He belonged to the Blue Lodge and O. E. S. in Reading, K. T. of Hillsdale, Reading Lodge 287 I. O. O. F. and Elks Lodge of Coldwater.

He was a splendid example of the "family physician" whose rapidly thinning ranks are giving grave concern to the medical profession and the discerning public. Being a faithful member of his County Society, he was also a member of the Michigan State Medical Society and a Fellow of the American Medical Association.

D. W. Fenton, Secretary,
Hillsdale County Medical Society.

The following resolution was passed by this County Society:

"That we, the members of the Hillsdale County Medical Society, wish to tender to the family and relatives of Dr. F. R. Robson our deep sympathy

in their bereavement, which is ours also, and that of the community of which he was a part, and that this resolution be placed upon the records of the Society."

By Committee,
W. H. Sawyer,
D. W. Fenton.

NEWS AND ANNOUNCEMENTS

Thereby Forming Historical Records

Dr. G. L. LeFevre of Muskegon, is in Europe and will return about September 1st.

Dr. Eugene S. Browning, Grand Rapids, is spending six weeks at the University Hospital at Ann Arbor in post-graduate work in dermatology and radiology.

On Friday, June 14, 1929, the staff of the Highland Park General Hospital honored their resident physician, Dr. N. Elton, with a subscription dinner. Dr. Elton has distinguished himself in the previous year by doing clinical research work on the Icterus Index in Lobar Pneumonia. In response to the toastmaster, Dr. Elton stated that he was inspired toward doing this work by the fact that pneumococci are bile soluble. He stated that there is a definite clinical significance proportionate to the bile index.

The executive council of the American Association for the Study of Goiter has instructed me to inform you that a prize of three hundred dollars (\$300.00) and a medal of honor will be awarded by the association to the author of the best essay based upon original research work on any phase of goiter, presented at their annual meeting at Seattle, Washington, in September, 1930.

Composing manuscripts must be in the hands of the Corresponding Secretary by July 4, 1930, so that the award committee will have sufficient time to thoroughly examine all data before making the award.

Full particulars of other regulations governing details of the offer will be furnished on application.

If you will kindly give the contents of this letter full publicity especially among those interested in research work, we will greatly appreciate it.

The American Association for the Study of Goiter hopes this offer will stimulate valuable research work on the many phases of goiter, especially on its basic cause.

TRAUMATIC RUPTURE OF BLADDER WITH PERIVESICAL EXTRAVASATION

W. Calhoun Stirling and Norvell Belt, Washington, D. C., report on seven cases. Hematuria, disturbance of urination, pain and a tumor mass in the suprapubic area constitute the usual picture of rupture of the bladder. Treatment consists of (1) supportive measures, including transfusion if needed, salt solution under the skin, opiates for relief of pain, and control of all bleeding, and (2) immediate suprapubic cystostomy, together with counterperineal drainage if needed.—
Journal A. M. A.

— JACKSON —

A City of Diversified Industries in Southern Michigan. “The World Takes What Jackson Makes”

Almost 100 years ago Horace Blackman, Captain Alex Laverty and an Indian guide, Pe-wy-tum, left Ann Arbor, and traveling two days through woods and marsh, came to where several Indian trails crossed the Washtenong Sepe (Grand River). After finding the river they made their camp for the night of July 3, 1829. At sunrise the following morning salutes were fired celebrating Independence Day and the founding of the present city of Jackson. Indians from nearby camps came to join them.

EARLY HISTORY

Horace Blackman then staked his claim, built the body of a log cabin, and that fall returned to New York State for the rest of the Blackman family and some friends. On May 27, 1830, they began to arrive, and other families came during the summer and built cabins and shacks, numbering 13 in all. This was the first year of the settlement.

RE-CHRISTENED

The village was named Jacksonburgh, for President Jackson, on January 16, 1830. In 1837 the name was changed to Jackson, and the place was incorporated February 14, 1854. Jackson has always been the judicial seat of Jackson County.

WISELY SELECTED SITE

It is evident that Mr. Blackman made considerable study in selecting the site for the city, placing it as nearly as possible in the center of the block of 20 townships. Horace Blackman is to be congratulated on his selection of this spot for the city of Jackson. For he chose a most advantageous place for a city to be built, which will always have a future, where railroads serving the community provide direct transportation routes connecting the other large cities with Jackson.

STRATEGIC LOCATION

Jackson's location is one of great advantage and importance. The city is in the heart of southern Michigan's rich agricultural lands. With Detroit 76 miles to the east, Toledo 71 miles to the southeast, Cincinnati 244 miles south, and Chicago

208 miles west, Jackson could not be more favorably situated than it is. The city covers an area of nine square miles.

TOPOGRAPHY

The topography of Jackson is also to be considered. The hills which border the valley of the Grand River provide beautiful and healthful home sites for Jackson's population, while the river flowing through the city provides adequate drainage. The city is 950 feet above sea level. With 120 lakes in Jackson County, this section of Michigan is fast becoming the summer playground of America. Average temperature is 47 degrees. The average summer temperature is 74.1 degrees.

POPULATION

The population of Jackson at the opening of 1927 was 67,014, exclusive of suburbs, showing that Jackson's increase in population has been as rapid as that of the average American city. Estimated 1929, Metropolitan Jackson 75,605.

GOVERNMENT

Jackson was one of the first cities in Michigan to adopt the commission-manager form of government, and 1928 is its thirteenth year under that form. A mayor and four commissioners, through a city manager, direct the city's affairs, aided by 12 department heads and a large force of clerks and assistants.



Consumers Power Co.



Central State Bank Building

VALUATION AND TAXES

Property valuation, 1928, \$86,384,569. Summer tax rate \$9.86. \$72,418,270 represents real property and \$13,966,099 personal property. The city budget summary for year 1928: General funds requirements \$938,457.81; estimated revenue, \$87,175.00; tax raised, \$851,282.81. Winter tax (1928-1929) is \$19.56 per thousand, divided as follows: State tax, \$2.955; county, \$3.858; schools \$9.422; county roads \$2.004; county interest and sinking fund \$1.321. The city charges a 1 per cent collection fee, which will make the total tax



Booth Publishing Co.

\$19.76 per thousand. Tax assessed against city property, \$1,689,088.76. The city pays approximately 71¼ per cent of the total county tax.

GROWTH OF CITY

Population more than doubles in 20 years and expands in every line. Comparative figures compiled by the Chamber of Commerce for the years ending January 1, 1929, are as follows:

	1908	1929
Population	30,000	63,700
Assessed Valuation	\$16,046,465	\$86,384,569
Miles Paved Streets	6.12	60.43
Miles Sewers	37.1	128.02
Men in Police Department	23	57
Fire Department	39	70
School Buildings	17	25
Pupils in Schools	4,271	13,400
Miles Water Main	75	132.54
Telephones	6,000	12,528
Manufacturing Industries	80	140
Est. Val. Products	\$13,981,121
Annual Wages, Est.	\$ 2,400,000



Jackson City Bank and Trust Co.

United States Department of Commerce figures for Jackson for year 1927 are: Persons employed in gainful occupations, 32,758, of which 26,010 were males and 6,748 females. Value of products, 1927, estimated \$60,930,674. Wages, 1927, industrial, estimated \$12,466,287.

In 1908 there were 1,100 telephones and 1929: 12,528 (Michigan Bell Telephone has \$2,450,000 invested in Jackson).



Elks Temple
(General Headquarters for Michigan State Medical Meeting)

EDUCATION

Public school property in Union School District is valued at \$4,783,000. Jackson has 20 public schools, valued at \$4,783,000, including land buildings and equipments; four Catholic parochial schools; one Seventh Day Adventist parochial school and one business college. Jackson Junior College was opened in September of 1928, with 154 students.

Regular public schools enrollment year 1927-1928: High, 1,368, intermediate, 2,232; elementary, 5,543; kindergarten, 1,108; part time, 210; vocational, 8; total, 10,468. At the beginning of the school year 1928-1929, the enrollment increased 718 from the year before, including students in the Junior College. Evening schools, 1928-1929, enrolled 1,763; summer schools in 1928, net enrollment 496; summer playgrounds average attendance in 1928 was 1,333. Catholic parochial school enrollment fall of 1928: St. Mary's, 765; St. John's, 745; St. Joseph's, 287; St. Stanislaus, 679; total, 2,476.

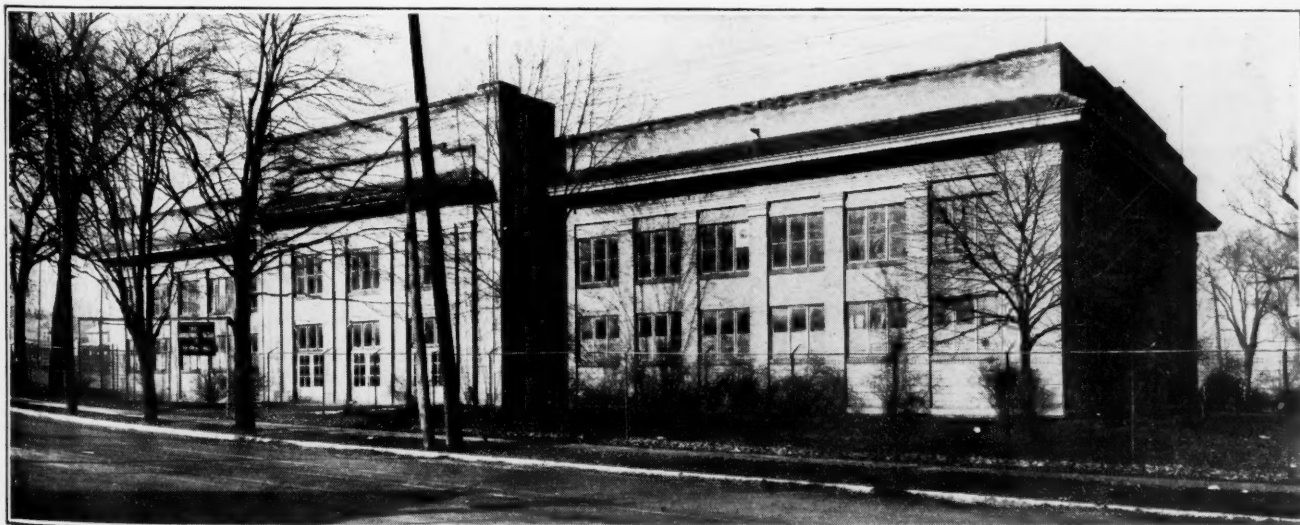
School tax for 1928 was \$8.96 per thousand. Amount raised, \$786,273; primary money, \$169,235.

Professional employees of public schools: Supervisors and special, 25; principals, 19; high school and junior college teachers, 63; intermediate, 68; vocational school teachers, 21; elementary, 133; kindergarten, 14; total at beginning of year 1928-1929, 343; previous year, 321. Of this number, 22 have taught in Jackson 25 years or over; 16 here 20 to 24 years, 22 here 15 to 19 years; 27 here 10 to 14 years; 74 here 5 to 9 years. Salaries range from \$1,200 upward, 26 receiving \$2,500 or over. Public school libraries contain 38,595 volumes, valued at \$19,300.

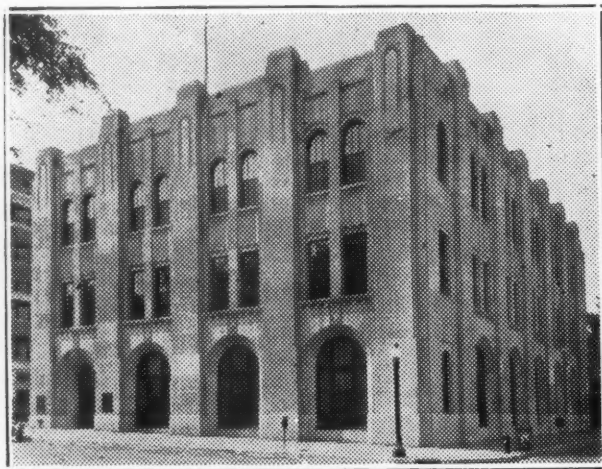
Jackson's school savings system leads all other schools in the state in the average gross deposit per pupil. Ninety per cent of the pupils participate or 7,969, average number depositing each week, 4,927; deposits, \$95,642.27; interest credited, \$8,401.42; net savings, \$26,714.28; bank balance as of June 20, 1928, \$212,510.97; average gross deposit per depositor, \$12; average net deposit per depositor, \$3.35.

SOCIAL AND CIVIC

The general atmosphere of sociability that pervades all homes and business places is an item of which Jackson can boast. Heading the list of social and civic organizations is the Chamber of Commerce, with nearly 1,000 active members, a live organization that is known for its courtesy in entertaining those who look upon Jackson as a possible location for a new industry, and for its readiness to lend aid in any movement for civic betterment. The city also has six luncheon clubs, all being interested in the city's welfare. The City Club of Jackson numbers 700 members, and its home has one of the finest buildings of its kind in the state, valued at \$150,000. The Y. M. C. A. and Y. W. C. A. have fine buildings, and each carries out an interesting social, educational and health-building



Municipal Auditorium

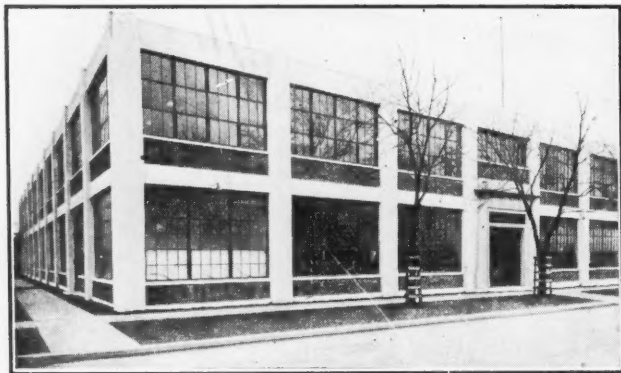


Bell Telephone Co.

program for the young people. Thirteen charitable and benevolent associations are engaged in social welfare and relief work among the needy of the city.

INDUSTRIAL

The diversified industries of Jackson are largely responsible for a certain stability not found in many cities in the automobile manufacturing district. Some of the leading manufacturers of Jackson are: Sparks-Withington Company, manufacturers of radios, automobile horns—employing over 4,500 people; the Michigan Central Railroad shops—employing over 2,300; Jaxon Steel Products, manufacturing of wheels, rims and General Motors stampings—employing over 2,000 people; the American Gear & Mfg. Company—employing over 250, subsidiary of Hupmobile; Frost Gear and Forge company—employing over 800; the Kelsey-Hayes Wheel Company, one of the largest wheel companies in the world—employing over 750; Jackson Motor Shaft, manufacturers of cam and motor shafts—employ-

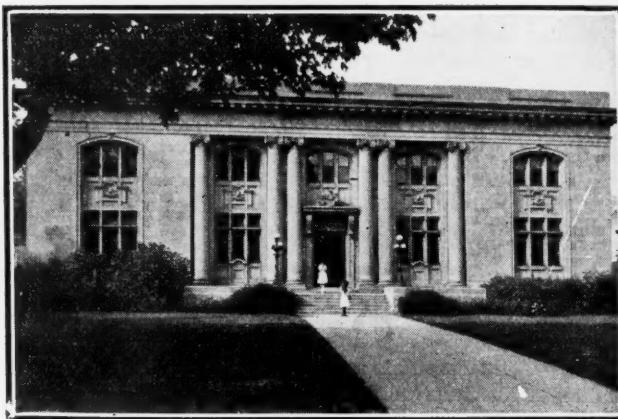


Reynolds Spring Co.

ing over 700; Michigan Seating Company, manufacturers of furniture and Kaltex—employing over 250; I. M. Dach Company, garment manufacturers—employing over 248; S. H. Camp Co., manufacturing surgical appliances—employing over 150; Reynolds Spring Company, manufacturers of automobile spring cushions, furniture strips and Reynolite Products—employing over 700 people.

A partial list of the products manufactured in Jackson gives some idea of the diversity of our industries:

Awnings	Furnaces
Boilers	Pickles
Bed springs	Paints
Binder twine	Rolling chair wheels
Brick	Refrigerators
Belt	Saw motors
Bicycle	Sewer pipe
Wheels	Screw products
Canned goods	Seeds
Charcoal	Tooth paste
Corsets	Tin products
Concrete block machinery	Burial vaults
Coil springs	Wire specialties
Paper bags	Farm implements
Patterns	Felt products



Public Library

Perfumes	Auto horns
Plated goods	Furniture
Patent medicines	Greases
Rotary sieves	Gas engines
Show cases	Art glass
Sheet metal products	Gas lighting plants
Skirts	Interior finished
Tents	Lathes
Tools	Leather goods
Vinegar	Monuments
Wire fences	Medicine cabinets
Candy	Motor cycle wheels
Concrete mixers	Marine motors
Cushion springs	Mill supplies
Castings	Machine tools
Chemicals	Oils
Cement	Oil heaters
Drills	Potato machinery
Drugs	Signs
Dust collectors	Shoes
Dresses	Toilet articles
Extracts	Underwear
Floor lamps	Water heaters
Flour machinery	Window display fixtures
	waists

JACKSON LISTED AS EIGHTH INDUSTRIAL CITY

Jackson ranked eighth industrial city of the state with an employment total of 12,555 for 527 firms. Men workers

numbered 9,671, while female help totaled 2,884. The average daily payroll was \$65,195, of which the men received an average per diem of \$5.74 and the women, \$3.36. Office employes numbered 1,200, while manual workers, of whom 2,257 were women, totaled 11,355. The average daily wage of manual workers was \$5.14.

Stores numbering 292, reported 1,475 persons at work, with 791 men receiving an average wage per day of \$5.41



American Gear Division of Hupp Motors



Hotel Hayes

and 684 women receiving \$2.89. Forty-four hotels and restaurants employed 335 at an average daily wage of \$3.60. One hundred ninety-one factories employed 10,745, of whom 8,732 were male and 2,013 were female workers. The former received an average daily wage of \$5.80 and the latter \$3.53. Factory workers were divided into 1,027 office and 9,718 manual workers.

MERCY HOSPITAL

JACKSON, MICHIGAN

Jackson Mercy Hospital, un-

der the direction of the Sisters of Mercy, is in the 15th year of its existence. Its humble beginning in what is now known as the Blackstone Hotel coincides with a general awakening in our city and country to a better knowledge of hospital service, and to a want of greater protection of life and health.

National hospital organizations, still in the embryonic stage, were soon after to make their influence felt at home and abroad. The American Hospital Association was in a period of healthy growth, but the American College of Surgeons had not yet published the hospital minimum standard. The American Medical Association had not yet exacted in the curriculum a fifth year which now brings the student in helpful contact with the profession in active hospital practice. True, a J. B. Murphy was then conducting his incomparable clinic at Mercy in Chi-



Hotel Otsego



Peoples National Bank

cago, and at St. Mary's of Rochester, the Mayo Brothers were climbing the ladder of fame to the great benefit of patients.

Governor Blair's homestead, of Civil War fame.

After one year of hospital administra-

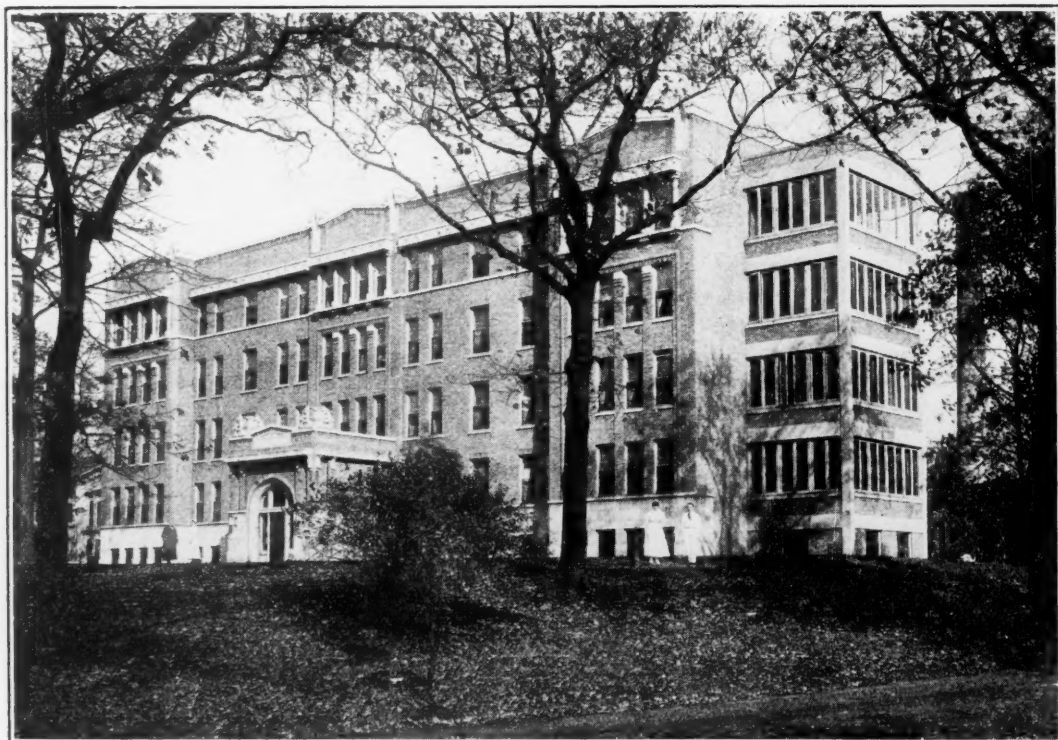
Hospitals are not a creation, they are a development. Mercy Hospital is no exception. It is still growing in the midst of an intelligent public, willing to acknowledge the efficiency that comes only from sacrifice where human suffering is to be alleviated.

At the opening of Mercy Hospital in February, 1915, the ward rates were \$10.00 a week, the maximum charge for private rooms was \$25.00 per week. An attempt was made to establish obstetrical, medical and surgical departments with a capacity of 28 beds.

However, the equipment was by no means all the Sisters of Mercy desired. The plans for better and greater facilities crystalized in a step for the erection of a new building.

SITE CHOSEN IN 1913

As far back as 1913, through the far-seeing mind of Rev. E. M. Cullinane and the assistance of loyal friends, a site had been purchased on Lansing Avenue for that purpose; the very site of



W. A. Foote Memorial Hospital

tion in the renovated Devlin's College, popular consciousness of the Sister's designs was manifested by donations of about \$32,000 to help carry these designs into execution.

NURSES' HOME SECURED IN 1916

In 1916, the Townley property was purchased adjoining the Blair estate and the Townley mansion used for nurses' home. Up to this time the student nurses had

been quartered at the rented Weatherwax home, corner of Blackstone and Cortland streets.

LAYING OF CORNERSTONE IN 1917

September 23, 1917, the cornerstone of the new Mercy Hospital was laid. Rev. E. D. Kelly, D. D., officiated, assisted by Rev. Jos. Herr, LLD., Rev. E. M. Cullinane, Rev. John G. Wall, and a number of dignitaries of church and state.

Addressing the multitude assembled on the ground, Rt. Rev. Bishop Kelly reviewed the history of hospitals in the new world, congratulated the city of Jackson on the establishment of the institution, declaring that Mercy Hospital is not a dividend making institution but one to care for the needs of the sick and afflicted and, adding in a prophetic tone: From the patronage of the present hospital, its success is insured.

Patronage has indeed gradually increased so that, on this date, the need of completing the long proposed addition is imperative.

NEW UNIT DEDICATED DECEMBER 17, 1918

The crucial period of the world war delayed the work of the original structure. It was not until December 17, 1918 that the first unit was dedicated by the Bishop of Detroit, Rt. Rev. James J. Gallagher, D. D.

This unit of construction has a capacity of 75 beds, comprises four stories above the ground floor or basement, and occupies 105 feet at its front elevation, while two wings separated by a paved court extend to the rear for 121 feet with respective breadths of 45 and 30 feet. The plans provided for an additional wing of the same length.

An elevator of the automatic type has been installed close to the ambulance entrance at the rear. At the left of the elevator is the electric dumb-waiter to convey the food from the diet kitchen to the tray rooms. At the right of the elevator on the patients' floors, are the chart rooms, linen and supply rooms, utility



Reynolds Building

rooms, clothes chute, and within easy access, flower rooms facing the open court.

The present appointment will be somewhat modified when the additional wing is completed.

The ground floor is now devoted to separate dining rooms for sisters, graduate nurses, student nurses, maids, and male help. The north wing contains the nurses' lecture hall, the laboratory, the drug room and X-ray department.

The central wing contains the main kitchen and adjoining dietetic laboratory with adequate equipment.

The front entrance leads directly to the chapel which is of Gothic architecture with stained glass windows and arched ceiling.

To the left of the entrance are the sisters' quarters. To the right, are the reception room, office, record and doctors' rooms, resident chaplain's suite, and private rooms in the wing ending with the solarium. Bathrooms and lavatories are interspersed throughout the hospital, some bathrooms and lavatories being so placed as to serve two rooms.

The maternity department occupies the second floor. A sterilizing battery adjoins the delivery room. The creche is equipped with two rows of cribs and a Hess incubator. Attention has been given to render the rooms attractive in selecting a variety

of pleasing shades in sanitary furniture harmonizing with the tinted walls.

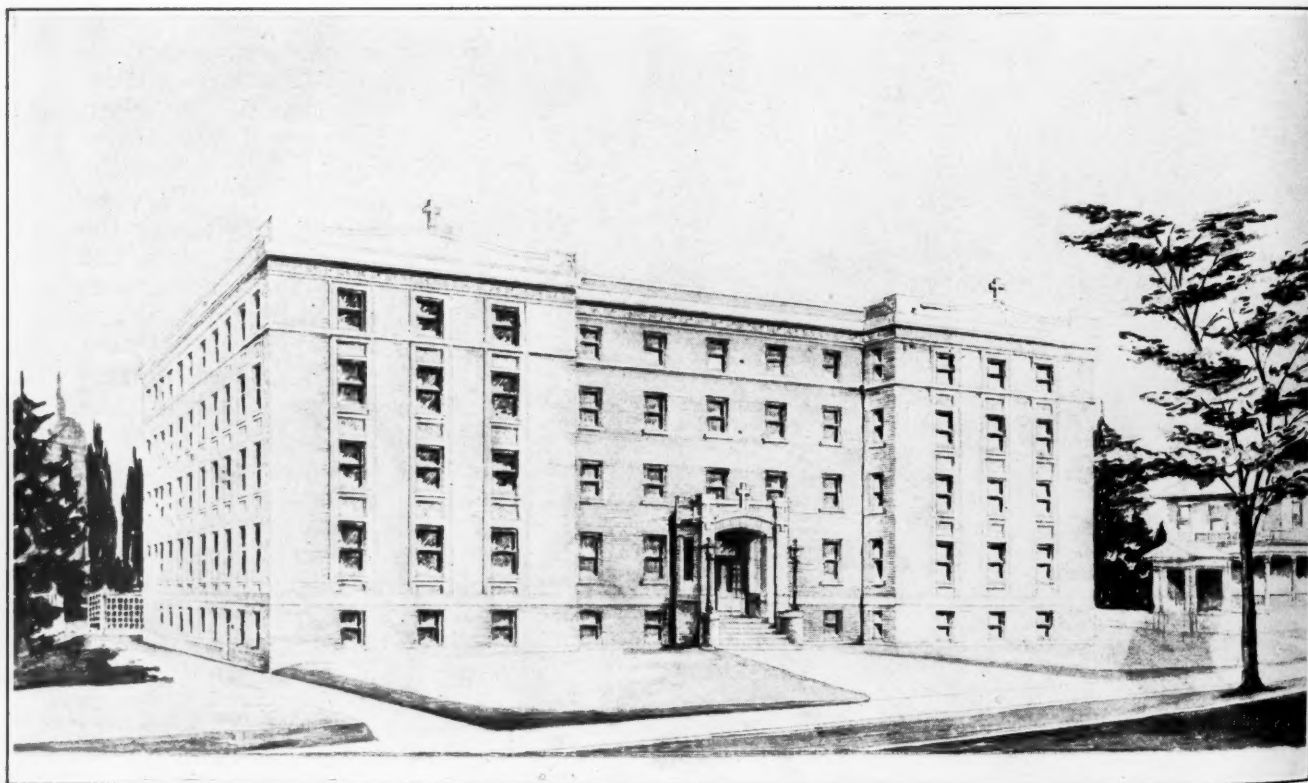
The third floor is assigned to the surgical patients, divided into private rooms and one four-bed ward. The operation rooms are separated from the main corridor by a distinct hall-way which leads to the doctors' consultation room, the nurses' work room, the doctors' dressing room, the sterilizing and operating suites, doctors' and nurses' scrub rooms. The lights are of the Bartlett No-Shadow type.

The signal lights in the wards and private rooms summon the nurse by simultaneously flashing a call at the nurses' station and in the main office.

An indirect lighting system is used throughout the hospital, it being possible to turn on a bright light or a night light of softer rays from the same switch. Each room is also equipped with a socket for a drop light and with cord socket used in signaling nurses.

The power plant in the rear is equipped with two 80 horse-power return tubular boilers, 14 feet by 60 inches, with provision for a third. Hawley down draft furnaces are provided.

The direct steam heating system takes care of all heat losses and maintains satisfactory temperatures in all rooms, dependent upon the uses to which they are put,



Mercy Hospital, Second Wing Complete

entirely independent of the ventilating system. Louvres at the bottom of the doors admit fresh air while the impure air is drawn out through ventilators near the ceiling.

An electric vacuum cleaner is connected to each floor by two-inch risers.

A hot water tank of 250 gallons capacity gives the needed supply from the boiler room.

The power laundry is fully equipped with modern appliances. It has lately been installed in a separate building which provides adequate capacity for future needs, and contains a Permutit Water Softening Plant.

Thought of the future has also been shown in doubling the capacity of the nurses' lodge in 1926.

So far is the description of the present physical plant at the disposal of Mercy Hospital authorities for the care of the patient.

One might speak of the beauty of the surrounding grounds, of the majestic oaks and of wide-embracing elms gracing the verdant slope, of a new inviting driveway,

the delight of autoists, but enough has been said of the exterior: 'tis but the shell of the hospital.

FOR GOD AND HUMANITY

Vastly more important is the spirit within, viz.: the soul of the hospital. "For God and Humanity" is the inspiring motto which directs the personnel to works of mercy for the suffering, and incites all to make of Mercy Hospital a real "Home" for the sick.

This spirit of devotion has been nobly shared by the medical staff. A complete reorganization of the staff was made in 1921, with Dr. C. D. Munro as first chief. The executive committee of said staff was made to consist of the chief, vice-chief, secretary and of the chiefs of the following units, viz.: General surgery, medicine, obstetrics, eye, ear, nose and throat; pediatrics, dental surgery, roentgenology and anesthesia. The chief of clinical laboratory was later made a member of the executive committee. Monthly instructive staff meetings are regularly held to review the clinical hospital work.



A Private Room

A HOLE-IN-ONE

To further the benefit of these valuable meetings, staffs from neighboring cities, particularly St. Joseph Mercy's of Ann Arbor and St. Lawrence Hospital's of Lansing have responded to the invitation of holding joint meetings. These joint meetings have resulted in closer friendship between leading physicians of the vicinity, who have learned to appreciate more and more, not only the value of efficient service to patients but also, in a minor degree, the unusual skill of Jackson physicians on the golf course.

Golf tournaments have become a yearly performance of Jackson Mercy and Lansing St. Lawrence hospital staffs. Dr. C. D. Munro has the distinction of making the first hole-in-one ever registered at the Jackson Country Club. The press has on record that on the 17th hole, 169 yards in length, Dr. Munro scored his "ace".

Mercy Hospital Staff has on its rostrum 38 staff members who have proved themselves loyal to Mercy Hospital.

MEDICAL LIBRARY

An extensive and growing medical library is a feature of the educational department of Mercy Hospital. The State Board of Registration of Medicine gives its approval to the service offered to internes. To date, only students of Class A medical schools have been accepted.

SCHOOL OF NURSING

Up to January 1, 1929, Mercy Hospital School of Nursing has graduated 61 nurses. The growth and success of the work have been fostered in no small degree by the active and sympathetic interest of the members of the hospital staff who have generously given time and encouragement.

The first patient referred to Mercy Hospital was admitted February 20, 1915. It is estimated that the number of registered patients will be very close to 30,000 by February 20, 1930.

Eighteen thousand, five hundred and ninety-eight days' active services were rendered in 1928, for a total of 3,147 patients.

MERCY HOSPITAL AUXILIARY

Mercy Hospital has welcomed the sym-



A Cozy Corner, Second Floor

pathy and intelligent help of Mercy Hospital Auxiliary, an association of Jackson ladies formed to assist the management in dispensing aid to the sick in need. These devoted ladies, together with an Advisory Board of prominent business men, have helped to create a closer contact between the hospital and the public, and, bringing relief in financial burdens, enabled the institution to do a greater amount of charity.

Inscriptions throughout the hospital bear testimony to the generosity of many loyal friends who are an incentive to carry on a work of benevolence in Jackson, and assist the physicians in the great art and science of healing.

HONOR TO THE PHYSICIAN

To the physician, honor is constantly referred. In the adornment of the Staff Room, opposite the Award of the American College of Surgeons, is seen an illuminated quotation of the Bible, verses 1, 2, 3, 4, 7, 9, 11, and 12 of Chapter 38, thus worded:

"1. Honor the physician for the need thou hast of him; for the Most High hath created him.

"2. For all healing is from God, and he shall receive gifts of the king.

"3. The skill of the physician shall lift up his head, and in the sight of great men he shall be praised.

"4. The Most High hath created medicines out of the earth, and a wise man will not abhor them.

"7. By these he shall cure and shall allay their pains, and of these the apothecary shall make sweet confections, and shall make up ointments of health, and of his works there shall be no end.

"9. My son, in thy sickness neglect not thyself, but pray the Lord, and He shall heal thee.

"11. Give a sweet savor, and a memorial of fine flour, and make a fat offering, and then give place to the physician.

"12. For the Lord created him; and let him not depart from thee, for his works are necessary."

STAFF OF W. A. FOOTE HOSPITAL FOR 1929

Surgery—

Dr. H. A. Brown.
Dr. E. S. Peterson
Dr. J. E. Ludwick
Dr. W. L. Finton
Dr. Geo. Pray
Dr. Don Kudner
Dr. H. L. Hurley
Dr. C. C. Hicks
Dr. Philip Riley
Dr. M. N. Stewart
Dr. Corwin Clarke
Dr. W. Townsend

Medicine—

Dr. E. F. Lewis
Dr. C. Corley
Dr. W. H. Enders
Dr. F. C. Ransom
Dr. G. R. Bullen
Dr. E. G. Wilson
Dr. L. F. Thalner
Dr. L. L. Stewart
Dr. E. A. Thayer
Dr. A. M. Shaeffer
Dr. R. H. Alter

Eye, Ear, Nose and Throat—

Dr. Cochran
Dr. E. O. Leahy
Dr. Hardie

Dr. Newton
Dr. John Smith
Dr. McGarvey

Obstetrics—

Dr. J. B. Meads
Dr. C. A. Leonard
Dr. W. H. Lake
Dr. F. F. Pray
Dr. F. Cox

Pediatrics—

Dr. Dengler
G. U. & V. D.
Dr. Frank VanSchoick
Dr. M. J. McLaughlin

Dermatology—

Dr. H. W. Porter

Consultants—

Dr. C. D. Munro
Dr. G. A. Seybold
Dr. F. W. Rogers
Dr. J. A. Roberts

Radiology—

Dr. J. C. Kugler

HISTORY OF HOSPITAL

In the year 1886, a number of influential men of this city bought an old residence. This was deeded to the city to be used as a hospital. Being property of the city it was not incorporated.

After a few repairs the building was opened as a City Hospital with a Miss Edricks as superintendent until 1888, at which time Miss Flora A. Stickle took charge. Miss Stickle trained in Battle Creek, but was not a graduate. A change was made in 1899 when Miss Mimill West, a graduate of Grace Hospital, Detroit, Michigan, came to act as superintendent, continuing until 1901.

It was at this time that the Jackson Hospital Training School was started with two students enrolled through the influence of Dr. D. E. Robinson.

In 1901 Miss Margaret Moore and Miss Mary Hodson, graduates of St. Mary's Hospital, Detroit, Michigan, took charge. Miss Moore, as superintendent, remained for 13 years, and Miss Hodson, as night supervisor, remained for two years.

In 1903 the length of training was changed to three years, and the Training School was incorporated August 18, 1906. At this time the hospital was remodeled to a fifty-bed capacity due to increase in patients.

In the year 1915, Mrs. W. A. Foote saw the crowded condition of the hospital and deeded a piece of land to the city with the purpose of building a modern, well-equipped hospital to be known as the W. A. Foote Memorial Hospital, in memory of her husband. This was completed and opened early in 1918 with the Jackson Hospital Training School transferred to the new institution. The old building was then used and known as the City Contagious Hospital.

W. A. Foote Memorial Hospital continues as the City Hospital with an increase of patients each year. In 1926 all the floors

were completed and in use. Modern equipment and everything for the patient's comfort and treatment were installed, due to the influence of the present superintendent, Miss Margaret Spiers.

WORK TO BE STARTED SOON ON NEW JACKSON SANATORIUM

Jackson county's proposed sanatorium will be a reality before long if the progress that has been made within the past few months in laying plans for the institution is continued. Approval was given recently by the special building committee of the Jackson County Board of Supervisors to the drawing of the sanatorium submitted by consulting architect T. B. Kidner.

Embodying the latest principles of sanatorium construction, the building is expected to rank as one of the finest of its type in the United States. The high quality of the plans for the new structure is attributed largely to the extensive investigations into the problems of sanatorium building made by the Board of Supervisors.

At the behest of the Michigan Tuberculosis Association and the State Department of Health, three of the county supervisors, J. F. Thompson, W. J. Antcliff, and F. E. Town, made a trip to Ironwood to attend the mid-year Sanatorium Conference held there on July 30 and 31. They visited in the course of the trip a number of sanatoria, both in Michigan and Wisconsin, receiving valuable first hand information on the patient facilities, cost of building and upkeep, and administration. The Board of Supervisors made certain that the building would be planned in accordance with the accepted standard by engaging the services of Mr. Kidner, a specialist in sanatorium architecture.

The sanatorium will contain accommodations for 54 patients, according to the plans accepted by the building committee. The third floor will be reserved for advanced cases. Eight single and six two-bed rooms, each having individual lavatories, are planned for this floor.

Semi-ambulant and ambulant patients will be placed on the second floor, where the specifications call for four four-bed wards and six two-bed rooms. Screens will be used to divide the wards into two divisions of two beds each, giving more privacy to the patients. Sitting rooms, porches, and open terraces will be provided for the patients on this floor.

With the exception of two three-bed wards for children the first floor will be given over to administrative offices. Two dining rooms, one for patients and one for nurses, a nurses' rest room, and the out-patient department will be situated on the ground floor.

The basement floor will contain a room for recreation and occupational therapy, in addition to the heating plant, kitchen, employes' dining room, and store rooms.

The question of whether or not Jackson County was to have a new sanatorium hinged on the disposition that could be made of \$71,000 voted in 1918 for a contagious hospital which subsequently was never built. The need for a tuberculosis sanatorium became ever more urgent, and when the legislature passed the act declaring tuberculosis to be a communicable disease, the Board of Supervisors, according to City Health Officer F. R. Town, voted to use the funds for a sanatorium. The state attorney general ruled that such use of

the money would be legal. The last obstacle to the construction of the sanatorium was removed when the voters of the county supported the measure at the September, 1928, elections.

THE EARLY PHYSICIANS AND THE MEDICAL SOCIETIES OF JACKSON COUNTY

FREDERICK W. ROGERS, M. D.

(Chicago Medical College 1886)

In our search for information on the early physicians of Jackson County, we find that the day historian frequently informs us what states they came from, but never says anything about what school they graduated from, or studied in, or whether they had any real medical training at all. As there was not until comparatively recent years any medical practice law in Michigan, a large share of the earliest physicians of the community, and several of the later ones, had no training better than taking care of some physician's horse, or working more or less in a drug store with a little desultory reading. It would be of interest to us if in speaking of these pioneers we could know what training they had.

The first families to locate in Jackson came in the spring of 1830, others came later and the village took on village ways, the farming country was rapidly settled, and other villages were soon on the map. The nearest and most advanced post of civilization was Ann Arbor, then a village of perhaps two hundred and fifty inhabitants, among whom according to a writer of that time were an undue proportion of lawyers, doctors and land agents. In September the wife of E. B. Chapman, one of the earliest group of settlers, was to be confined. For the accouchment Mr. Chapman secured Dr. Samson Stoddard, one of the super-numeraries at Ann Arbor. She was delivered of a daughter, the first white child born in Jackson county. Dr. Stoddard concluded to make Jackson his permanent home thus becoming the first physician to locate here. He was successful and popular, becoming a man of means. In 1840 he purchased and removed to a large farm near Concord in this county where he resided a number of years, later removing to Albion where he died.

In 1831 Dr. Oliver Russ came here from Vermont. Many legends have survived describing his bluff, robust personality. For a considerable time he made his calls afoot, and it is related that in 1832 upon hearing that cholera was epidemic at Marshall, he walked all the way there. He remained several days attending the victims and

after returning home walked back to Marshall, at other times staying various periods of time and doing what he could for the sick.

George W. Gorham was the next physician to arrive, coming in 1833. Records show that he was a much respected and successful practitioner, dying here in 1860. Ira Backus arrived in 1837, becoming a partner of Dr. Gorham, and practiced many years.

George W. Smith began practice here in 1836 but died soon after when, it is written, his prospects were very bright. By this time there were other physicians in some of the settlements of the county but the information is too meager and too difficult to obtain except for very enthusiastic historians. We find a Dr. J. A. Pratt locating at Spring Arbor in 1835, removing to some other field in 1844.

Dr. Edward Lewis, a fine scholarly gentleman, came from Vermont in 1835, locating on a farm near Concord, later taking up a medical practice at Concord village. He removed to Jackson as a much respected practitioner in 1843. His son, Dr. C. H. Lewis, a highly educated gentleman, practiced for some years in Chicago then came back to Jackson where, except for a brief time on the Pacific coast, he practiced until his death not many years ago.

About 1840 Dr. Bingham was practicing at Grass Lake and in 1833 Dr. J. G. Cornell purchased a farm at Spring Arbor. He practiced medicine for many years becoming the first president of the first Jackson County Medical Association.

Among the early physicians we find the names of two men who later obtained fame in other localities. Dr. John McLean began practice here in 1837. It is said that he ranked very high among his confreres and made a reputation that extended far from Jackson. When Rush Medical College was organized in Chicago he was invited to become a member of the first faculty, where he is said to have achieved great fame.

Another who attained great eminence among the medical men of Michigan was Abram Sager who located in Jackson in 1838, later becoming a member of the first faculty of the newly organized medical school at the University of Michigan. Dr. Peterson of the present faculty wrote some years ago a very interesting paper on his medical career. He successfully performed the earliest Caesarian Sections in Michigan while a member of the University of Michigan faculty.

Dr. J. A. Davis located in Jackson as a physician and a horse trader for an important transportation company. He gave up medical practice, removing to Albion in 1850.

Dr. David McClure located in Jackson in 1834. He operated a drug store, did office practice and frequently went in consultations with other physicians by whom it is written his opinion was held in much respect.

Dr. Charles L. Merriman located here about 1836 and practiced many years. Educated as a regular, he changed to homeopathic practice becoming probably the first of that persuasion in Jackson.

A well educated and energetic young man, Moses McNaughton, located in Jackson in 1840. He was a very capable practitioner and after a successful practice of several years, abandoned the practice of medicine to become a real estate dealer on a large scale. He died here at an advanced age. Dr. Joseph Tunnicliff, who became one of the leading surgeons of Jackson, began practice in 1840. In 1850 George W. Carhart located in Jackson and during the next twenty years was one of the leaders of the city. He died about the age of 45.

Dr. R. H. Davis, a graduate of the first class of the University of Michigan medical school, practiced here until disabled by the infirmities of age.

One of the most notable and talked of physicians in Jackson since the earliest days was Gordon Chittock. More stories and legends have survived him than any other medical man Jackson has known with the probable exception of Dr. Russ. Dr. Chittock practiced here from the early 50's until his retirement in the late 80's. He died at an advanced age many years after his retirement. There were a number of other physicians in practice here from 1850 up to the Civil War about whom not much is written.

Besides Doctors Chittock, Tunnicliff and Carhart appears the name of A. M. Crawford and a Dr. Turner, neither of whom were graduates but were practitioners for many years.

Probably one of the best known physicians in southern Michigan was Dr. J. D. North, a graduate of the late 50's. He practiced here many years. Dr. Cyrus Smith, also a graduate of the late 50's, practiced here until he died.

Dr. John Smith, a fine christian gentleman and a homeopathic practitioner, located here in the late 80's. He served in the Civil War as a captain of infantry.

After the war he resumed medical practice again and practiced in Jackson many years. Two of his sons have been honored members of the profession; Dr. Dean T. Smith, late professor of surgery at the Homeopathic Medical Department of the University of Michigan and Dr. John C. Smith, one of our highly successful eye, ear, nose and throat specialists and a past president of our County Society.

Many physicians of Jackson Sounty served in the Civil War, several from the smaller villages of the country whose names are not readily available. Of those most readily ascertained appear the names of Joseph Tunnicliff, surgeon to the first and fourth Michigan infantry, later brigade or active brigade surgeon; Cyrus Smith, A. M. Crawford and W. H. Palmer who enlisted as a hospital steward and was afterwards assistant surgeon; to R. H. Dans as contract surgeon; Gordon Chittock and others whose names do not come to memory on examining board for recruiting.

Dr. M. McLaughlin, who located in Jackson in the early 70's, has been assistant surgeon in a New York hospital. Dr. McLaughlin practiced in Jackson from the early 70's until the late 80's retiring with a competence. Dr. Miar McLaughlin now of this city is his son. Dr. A. E. Bulson survived through the Civil War as musician, enlisting as fifer before he was 14 years old. Dr. B. B. Anderson, father of Dr. W. B. Anderson of this city, served the ranks as a soldier and afterwards studied medicine and practiced successfully in Jackson until he retired from the infirmities of age.

From a study of available information the first County Medical Society was organized in 1843.

President, G. J. Cornell.

Vice President, Dr. Adams.

Secretary, John McLean.

After more or less a success the society died in a short time. In 1849 the society was revived and a new one formed, of which we find Moses McNaughton as president. This functioned several years. After the Civil War in 1866 the society was revived or newly organized—not clear which. Among other names our informants have forgotten, appear the names of G. W. Crawford, Gordon Chittock, A. M. Crawford and Cyrus Smith. A few years after the demise of this society, another was formed which had a short life, flickered and gave up the ghost. That a successful society in Jackson during those years was impossible is not strange. Medical ripping

up the back, slandering and depreciating the work of others were carried in those days to an extent and with a virulence incredible to the present generation of practitioners.

About 1888 or 1889 a county society called the Jackson Academy of Medicine was organized, functioned for a while, dwindled and died late in 1893 or early in 1894. There was no quarrelling in the society, the meetings were characterized by good feeling and good humor. One fact that worked for disaster was the apathy among several physicians who had the largest practice and were influential. They cordially approved the society idea but could not be drawn personally to a meeting with a caterpillar tread tractor. The only surviving members of this society in Jackson County are W. W. Lathrop and F. W. Rogers.

Early in January 1901, in response to a general call, several members of the profession in the city met at the office of Dr. A. E. Bulson to attempt to form a new society. Dr. Bulson acted as chairman and Dr. A. H. Wilton as secretary. Committees were appointed to effect a permanent organization. The meeting adjourned to meet again at the same place, January 24th. At this meeting on the 24th the society was formed with twenty-six charter members. The officers were:

President, A. E. Bulson.

Vice President, Mrs. Martha C. Strong.

Secretary, A. H. Wilton.

Treasurer, F. W. Rogers.

The next meeting was held February 14th, at which time it was decided to use Castle Hall, which is now the Majestic theater, for a permanent place for the next meeting which was to be held in April. This society has been supported loyally by the medical profession of Jackson County and is, we think, a strong, live society. Before the added strength given by the reorganization of the State Society, two factors made the society worth while. Several of the members who had the most lucrative practice set a fine example by invariably attending all the meetings, although for years the meetings were held in the afternoons and sometimes using the evenings and by leaving word at their homes and offices that they were not to be disturbed during the meetings. Another factor which is still perhaps even more pronounced by the policy of this society is the prominence of the social element. This adds interest to the meetings and gives the members opportunity to see what good

fellows the other men are when they meet them right. It is doubtful if there is another city where the relations of the doc-

tors with each other are more cordial or where there is less underhand trickery or back stabbing among them.

Official Program—109th Annual Meeting, Michigan State Medical Society—Jackson, Mich., Sept. 17-18-19, 1929

OFFICIAL CALL

The Michigan State Medical Society will convene in annual session, in Jackson, on September 17, 18, 19, 1929. The provisions of our Constitution and By-Laws and the official program will govern the business and transactions of this annual session.

Louis J. Hirschman, President.
R. C. Stone, Chairman of the Council.
Henry J. Pyle, Speaker.

Attest: F. C. Warnshuis, Secretary.

DAILY SCHEDULE

Headquarters: Elks Temple.

September 17th

10:30 A. M.—House of Delegates.
2:00 P. M.—House of Delegates.
7:30 P. M.—House of Delegates.

September 18th

9:15 A. M.—Scientific Sections.
1:30 P. M.—Scientific Sections.
7:30 P. M.—First General Session.

September 19th

9:15 A. M.—Scientific Sections.
12:00 P. M.—Second General Session.
1:30 P. M.—Scientific Sections.

EXHIBITS

A splendid scientific and commercial exhibit will be conducted in the main auditorium of the Elks Temple.

REGISTRATION

Registration and information booth will be located in the main auditorium of the Elks Temple.

MEETING PLACES

Section meetings will be held in the several auditorium rooms in the Elks Temple and in the St. Paul's Parish House directly across the street from the Temple.

HOUSE OF DELEGATES

The sessions of the House of Delegates will be held in the main ball room, Hotel Hayes, on September 17th.

FIRST GENERAL SESSION

Time: Wednesday evening, Sept. 18, 7:30 P. M.

1. Call to Order—President L. J. Hirschman, Detroit.
2. Invocation.
3. Welcome—President Jackson County Medical Society.
4. Announcements—The Secretary.
5. In Recognition—R. C. Stone, Chairman of the Council.
6. President's Annual Address—L. J. Hirschman, Detroit.
7. Address—(Invited guest).
8. Nominations for President.
9. General Business.

SECOND GENERAL SESSION

Time: Thursday, September 19, noon.

1. Call to Order.
2. Report of Nominating Committee.
3. Introduction of President.
4. Business.
5. Adjournment.

SCIENTIFIC SECTIONS

The Scientific Sections will meet on the 18th at 9:15 A. M. and 1:30 P. M. and at the same hours on the 19th. Detailed programs of each section will be published in the September Journal.

HOUSE OF DELEGATES

FIRST SESSION

Place: Main Ball Room, Hotel Hayes.
Time: 10:30 A. M., September 17th.
Speaker: Henry J. Pyle, Grand Rapids.
Secretary: F. C. Warnshuis, Grand Rapids.

ORDER OF BUSINESS

1. Call to Order.
2. Report of Credentials Committee.
3. Roll Call.
4. Speaker's Address—H. J. Pyle.
5. President's Address—L. J. Hirschman.
6. Annual Report of the Council—R. C. Stone.
7. Appointment of Reference Committee.
8. Election of Nominating Committee.

NOTE—No two members from one Councilor District shall be elected to the Nominating Committee.

Duty of Nominating Committee:

- (a) Supervise Ballot for President.
- (b) Nominate:

- (1)—Four Vice Presidents.
- (2)—Delegate and Alternate Delegate to succeed Dr. Carl A. Moll and Andrew P. Biddle, terms expiring.

- (c) Designate place of next Annual Meeting.
9. Reports of Committees:
 - Medical Education.
 - Public Health.
 - Legislation.
 - Tuberculosis.
 - Civic and Industrial Relations.
 - Venereal Prophylaxis.
 - Medical History.
 - Legislative Commission.
 - Delegates to A. M. A.
 10. New Business and Resolutions.
 11. Recess.

SECOND SESSION

2:30 P. M.

1. Roll Call.
2. Report of Reference Committees.
3. Unfinished Business.
4. New Business.

THIRD SESSION

7:30 P. M.

1. Roll Call.
2. Report of Reference Committees.
3. Report of Nominating Committee.
4. Elections:
 - (a) Four Vice Presidents.
 - (b) Place of Annual Meeting.
 - (c) Delegate and Alternate to A. M. A.
 - (d) Councilors.
 - 13th District
 - 14th District
 - (e) Speaker.
 - (f) Vice Speaker.
5. Unfinished Business.
6. New Business.

DELEGATES TO ANNUAL MEETING

List of Delegates and Alternates will appear in the September issue.

HOTELS

Hayes Hotel, No. of rooms 204 with bath

Single	\$3.00	\$3.50	\$4.00
Double	5.00	6.00	7.00 \$8.00

Otsego Hotel, No. of rooms 210 with bath

Single	\$2.50	\$2.75	\$3.00	\$3.50
Double	5.00	6.00	7.00	8.00

Dalton Hotel No. of rooms 100

Single	\$1.50
Single with bath.....	2.00 \$2.50
Double	2.50 3.00
Double with bath.....	3.50 4.00

Dalvan Hotel No. of rooms 67

Single	\$1.50
Single with bath.....	2.00
Double	2.50
Double with bath.....	3.00

Stowell House, No. of rooms 50

Single	\$1.25	\$1.50
Single, bath.....	2.00	
Double	1.25	1.50 \$2.00 \$2.50
Double, bath.....	3.50	

Jackson Hotel No. of rooms 40

Single	\$1.50
Single connecting bath.....	2.00
Single with private bath.....	2.50
Double	2.50
Double connecting bath.....	3.00
Double with private bath.....	3.50

Blackstone Hotel, No. of rooms 45

Single and Double.....	\$2.50	\$3.00
Single and Double with bath	3.50	4.00

Hotel Victoria, No. of rooms 48

Single	\$1.25	\$1.50
Single with bath.....	2.00	
Double	2.00	2.50
Double with bath.....	3.00	

PROGRAM OF THE LADIES AUXILIARY

Wednesday, September 18th

2:00 P. M.—Jackson Country club. Mrs. Guy Kiefer presiding.
Business meeting of the delegates to the Women's Auxiliary Convention.

Thursday, September 19th

1:00 P. M.—Bridge luncheon and golf at the Jackson Country club for all visiting ladies.

TRIPS TO THE NEW MICHIGAN STATE PRISON

Doubtless many of the guests and delegates will wish to see the new state penitentiary about two miles north of the city on the paved Cooper street road. The local committee will arrange through Warden Harry Jackson, one of the most amiable men you have ever met, to have groups taken through the prison and its factories. Bus transportation will have to be the medium for going there because other cars would take too much space and private cars are always searched at the exit.

The new hospital unit in the administration building will be finished by that time and the physician-in-chief, Dr. Speck, will be glad to show the visitors through his modern wards and operating quarters.

GARAGES

There are three large garages near the convention headquarters and the Hayes Hotel.

Temple Garage, 156 West Cortland St. \$1 per day
Auto Inn, 154 West Pearl St. \$1 per day
Hudson-Essex Co., 228 West Pearl St. \$1 per day

The last named garage is back of the Hayes hotel, the Auto-Inn is one block east of this, and the Temple Garage is between the Elks Temple and the Hayes hotel.

Arrangements have been made for reserved parking privileges with the police department on all streets around the Hayes hotel with no time limit but of course this is open parking with police protection but none against the elements.

COUNTY SOCIETY ACTIVITY

Revealing Achievements and Recording Service

Frederick C. Warnshuis, M. D.

Secretary Michigan State Medical Society

PORTLAND A. M. A. MEETING

Some 3,000 doctors made the long journey to Portland and were amply compensated by a splendid meeting, sincere local hospitality and an ever varying scene of a wonderful country. The profession of Portland were alert hosts and combined the business of the session with enjoyable social functions.

Michigan was ably and efficiently represented by its five delegates: Doctors J. D. Brook, C. F. Moll, A. W. Hornbogen, C. E. Boys and C. S. Gorsline. President Hirschman was ever active in presenting reasons why Detroit should be designated as the city for the 1930 meeting place and when the time came for designating the next place of meeting, Detroit won out over four other cities.

The scientific exhibits were most interesting and instructive, revealing wonderful scientific advancements. They in themselves compensate attendance. The section programs were well attended and were replete with most interesting papers.

The House of Delegates expeditiously discharged its business. The following extract from Secretary's West's report merits most thoughtful consideration by every member and every county society:

THE NEED FOR COMPACT AND EFFICIENT ORGANIZATION

The medical profession, in common with all other groups of society, is feeling the strain of a great transitional stage in the life of our country. In some ways physicians are being subjected to greater pressure and stress than any other group. The tendency of government toward paternalism, the restrictions imposed by legislative enactments and by bureaucratic regulations, the establishment of great funds and foundations ostensibly benevolent in character but with potentialities for harm rather than for helpfulness, the trend of modern business with its instalment plans and high pressure salesmanship, the propagation of half-baked theories, semi-truths and positive misinformation through the public press and even through periodicals designed for physicians, a flood of loose talk that is indulged in with scant consideration of what is and what is not fact and, it may be, the disposition on the part of a minor element of the profession to commercialize the practice of medicine and to pull away from ideals and traditions, established through the ages, that have made possible the progress and

the achievements of scientific medicine—all these are factors in the situation that exists today in which the medical profession finds itself the object of much criticism that is not deserved and the recipient of many suggestions for its own conduct, some of which may be helpful while others are known by physicians to be impractical or even dangerous.

There has never been a time when there was greater need for compact and efficient organization of the physicians of this country than exists now. Our own plan of organization is comprehensive and, in most particulars, entirely sufficient if put into proper operation and carried out with reasonable efficiency. This cannot be done if the dissipation of effort and the conflict of interest occasioned by the existence of a multitudinous number of independent medical organizations are to be continued. The number of these independent groups can be materially reduced with benefit to the cause of scientific medicine and, consequently, with benefit to the individual physician and to the public. They are maintained for the most part by our own members who could contribute more to the common good through the county medical society, the state medical association and the American Medical Association as the fundamental and necessary organization of physicians in the United States. The inordinate number of medical meetings occasioned by the existence of so many societies, the frequency of hospital staff meetings, on which attendance is compulsory under rules established by others than those who must attend, glorified as many of these staff meetings are into scientific societies, will sap the vitality of the county medical societies and make it impossible for the regularly organized profession to deal with problems that are pressing for solution and that cannot be solved through any other agency.

In one city, with a medical population of less than five hundred, thirty-three meetings are scheduled in one month, twenty-nine of them staff meetings. In another city, with less than nine hundred physicians, including non-members, twenty-three meetings are scheduled in one week, eight of them staff meetings. These examples might easily be multiplied if necessary.

In practically all instances, the members of independent organizations are the members of the component county medical societies. The work of the one group must be done by the very men that must be depended on by the other. Why cannot the regular organization meet all the needs of its members, since whatever is done must be done by them? If there is need for special programs, why can they not be arranged for by the county society and the state association and the national organization as a part of their own broad programs of work?

There are problems arising out of more or less revolutionary conditions of the times that cannot be effectively solved except through the agency of organized medicine. There are others that will

be solved only through the processes of evolution, although efforts are constantly being made to deal with them by the application of revolutionary methods. There is great need for well considered action on the part of a unified profession looking toward the solution of those problems that are susceptible of solution through human agency. It is equally important that there shall be no ill considered action in attempting to deal immediately and finally with those that will be worked out only through the process of time. There is need, also, for combating the efforts of agitators who set up windmills on which they can break their lances, who create great furor over pseudo-problems, and thus detract attention from important matters that should receive earnest and persistent consideration.

The urgent demand of the time is for unified action and for expression through a great voice that will speak authoritatively for the entire profession of medicine in the several states and in the United States. This demand can be properly met through unity that is possible only as the profession is compactly organized and as its attention is centralized, without undue division of fealty and without unnecessary waste, on those responsibilities and duties that naturally devolve on the profession in its organized capacity and that heretofore have been discharged with credit and honor.

County societies are urged to stress this recommendation in their local bulletins, and to mold local situations so that they will conform to Secretary West's recommendations.

Dr. Malcolm L. Harris of Chicago, assumed the office of president. Dr. Wm. Gerry Morgan of Washington, D. C., was chosen as president-elect. Dr. F. C. Warnshuis of Michigan, was re-elected as Speaker.

He who fails to attend an annual meeting of the American Medical Association, forfeits a wonderful scientific inspiration. It is hoped that the 1930 session in Detroit will induce a goodly number of our members to become regular attendants. In a subsequent issue extracts of official reports will be imparted.

HILLSDALE COUNTY

Again has the hand of death been laid heavily on the Hillsdale County Medical Society. On the evening of Friday, May 24, Dr. F. R. Robson of Reading, a well loved and faithful member of that society, returning late to his home from his office, was stricken by apoplexy and rapidly passed into a deep coma from which he never recovered, passing away on May 27, at about 2:00 p. m.

Dr. Robson was born at Belleville, Mich., January 11, 1874, and was therefore aged 55 years, 4 months and 16 days. He received his pre-medical education at the High School of Belleville after which he was graduated from the Detroit College of Medicine in 1897, followed by a post-graduate course at the University of Chicago. After this he came to Reading, Mich. and opened an office for practice. He soon became widely known as a skillful and conscientious physician. Ever genial, modest and unassuming, he was indeed, the "be-

loved physician" to a vast number of patients and friends, both within and outside of the profession.

He was married June 21, 1910, to Miss Etta Green of Detroit, who, with one brother, Edward Robson of Belleville and two nephews, survive him. He belonged to the Blue Lodge and O.E.S. in Reading, Knights Templar of Hillsdale, Reading Lodge 287 I.O.O.F. and Elks Lodge of Coldwater.

He was a splendid example of the "family physician" whose rapidly thinning ranks are a cause of grave concern to the medical profession and thinking people in general.

Being a member in good standing in his County Society, he was also a member of the Michigan State Medical Society and a Fellow of the American Medical Association.

Therefore, be it

Resolved, That we, the members of the Hillsdale County Medical Society wish to tender to the family and relatives of Dr. F. R. Robson, our deep sympathy in their bereavement, which is ours also and that of the community of which he was a part, and that this resolution be spread upon the records of this society.

By the Committee,
W. H. Sawyer,
D. W. Fenton.

OAKLAND COUNTY

Dr. A. L. Brannock won the Dr. Harvey S. Chapman trophy at the annual Oakland County Medical Society golf tournament Wednesday afternoon at Elizabeth Lake golf club. Dr. Brannock had a gross of 94 and a 24 handicap for low net of 70. The Dr. Chapman trophy has been donated for the annual golf competition of the county doctors.

Other prizes were won by Dr. E. Howlett, Dr. Frank Mercer, and Dr. Harry Sibley. "Dr. Dub's Trophy," for high score was won by Dr. C. A. Neafie, director of the city health department with a score of 153. "It was my first game of golf," Dr. Neafie said this morning. Last year it was won by Dr. Karl Zinn, who painted his name on the trophy, an enamel cooking pot, before it was presented at the affair Wednesday.

UPPER PENINSULA MEDICAL SOCIETY ANNUAL MEETING

The thirty-second annual meeting of the Upper Peninsula Medical Society will be held at Ironwood, Michigan on Wednesday and Thursday, August 7th and 8th. The program is as follows: Official Opening, Dr. A. J. O'Brien, President Gogebic County Medical Society; President's Address, Dr. H. E. Perry, Newberry, President Upper Peninsula Medical Society; Treatment of Fractures, Dr. C. W. Hopkins, Chicago, Illinois; The Physician's Library, A. F. Fisher, M. D., Hancock, Michigan; The Early Diagnosis of Exophthalmic Goitre, Dr. Samuel F. Haines, Rochester, Minnesota; Injection of Varices and Ulcers of the Lower Extremities, Dr. J. J. Walch, Escanaba, Michigan; Modern Methods of Treatment of Benign Prostatic Obstruction, Dr. Verne C. Hunt, Rochester, Minnesota; Patent Medicine and the Public Health, Dr. A. J. Cramp, Chicago, Illinois; Forceps and Episiotomy, Dr. E. L. Cornell, Chicago, Illinois; Treatment of Diabetes Mellitus, Dr. Arthur C. Curtis, Ann Arbor, Michigan; Focal Infection from the Standpoint of the Proctologist, Dr. Louis J. Hirschman, Detroit, Michigan; Infections of the Hand, Dr. S. L. Koch, Chicago, Ill-

inois; Personal Experiences with Pituitrin, Dr. W. L. Maccani, Ironwood, Michigan. The annual banquet for members, visiting physicians and wives will be held on the evening of August 7th. At 2 p. m. on August 8th a golf tournament will be held at the Country Club.

LENAWEE COUNTY

A joint meeting of the Lenawee County and the Fulton County (Ohio) Medical Societies with their ladies, was held at the Hotel Saulsbury in Morenci on the evening of June 20th. Twenty-five members of the two societies were present. After an excellent dinner, the ladies adjourned to the home of Dr. and Mrs. Westgate to play bridge.

At the business meeting, President Marsh gave a short report of the post-graduate course being held at the Receiving Hospital in Detroit under the auspices of the University of Michigan, the State Medical Society, and the Detroit College of Medicine and Surgery. He was very enthusiastic in his praise of the course. A motion was made by Dr. Chase of Adrian, and seconded, that the Society change its meeting night from the third Thursday in the month to the first Tuesday. Motion carried. A letter from Dr. George W. Crile responding to the Society's letter of sympathy to him following the explosion in the Cleveland Clinic was read by the Secretary.

After the business meeting, Dr. J. S. Pritchard of the Battle Creek Sanitarium gave a very comprehensive discussion, though very much condensed, of the "Early Diagnosis of Pulmonary Tuberculosis." Not within a long time has the Society had the pleasure of hearing so much of the high lights of a subject in so short a time as during this talk. He made it especially plain that early positive diagnosis of pulmonary tuberculosis is rare, but that all suspicious cases should be treated as if positive unless they can be diagnosed as something else. The symptoms of early cases should be considered as a toxemia. The temperature may be subnormal in the morning, but it rises to normal or slightly above at some time during the day. Primary infection is likely along the large bronchi, and there we may find the first physical signs. All suspicious cases should have a sputum analysis. When the patient says that he has no sputum, have him clear his throat in the morning and consider that as pulmonary sputum, as the discharges from the chest flow up into the throat during the night, and what appears as throat or head discharge is really the chest secretion carried up by the action of the ciliary epithelium.

After an expression of thanks by the Society, the meeting closed to await the conclusion of the bridge game of the ladies.

C. H. Westgate, Secretary.

THE DOCTOR'S LIBRARY

Offering Suggestions and Recommendations

PRINCIPLES AND PRACTICES OF ELECTROCARDIOGRAPHY. Carl J. Wiggers, M. D. Price \$7.50. C. V. Mosby Co., St. Louis.

A quite thorough exposition that should enable one to appraise the readings of his electrocardiograph.

CLINICAL LABORATORY METHODS—Russell L. Haden, M. D. Price \$5.00. C. V. Mosby Co., St. Louis.

This is the third edition of a simple yet quite complete outline of laboratory methods for the average laboratory worker. It is modern and should be of material value as a laboratory guide.

THE COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION FOR 1928—Volume XX. Edited by Mrs. M. H. Mellish, Richard M. Hewitt, M. D., and Mildred A. Felker, B. S. Octavo volume of 1197 pages with 288 illustrations. W. B. Saunders Company, Philadelphia and London, 1929. Cloth, \$13.00 net.

Nineteen volumes of these collected papers of the Mayo Clinic are already before the medical profession. This fact and the reputation of the Mayo Clinic render it entirely unnecessary to say anything in regard to the quality of the contents of this twentieth volume. The papers are all conveniently classified, the greater portion of any one section being devoted to the alimentary tract. This section comprises 334 pages; 143 pages have been devoted to the genito-urinary organs and approximately 100 pages to the ductless glands. There are other sections on blood and circulatory organs; skin and syphilis; head, trunk and extremities; chest, brain, spinal cord and nerves; and the last section is devoted to miscellaneous subjects. The subjects treated are almost infinite in their vari-

ety. The volume is well indexed for ready reference and convenient to handle in spite of its nearly 1,200 pages. These volumes represent fairly, progress made in the medical sciences for the year. We cannot too highly recommend the present volume to our readers.

OSTEOMYELITIS AND COMPOUND FRACTURES—H. Winnett Orr, M. D. Price \$5.00. C. V. Mosby Co., St. Louis.

For some time Dr. Orr has imparted in medical journals his method of treatment in osteomyelitis and compound fractures. He now tenders to the profession in this book a complete discussion of the principles governing his method.

There is nothing to criticize. The principles enunciated are sound and while Dr. Orr has given emphasis to them they have been applied by many surgeons who did not consider them so extraordinary. What Dr. Orr stresses is important to the younger surgeon, not only in regard to osteomyelitis and fractures, but also in fact to all wounds—there are far too many and meddlesome dressings being done.

THE CONQUEST OF CANCER BY RADIUM AND OTHER METHODS—Daniel Thomas Quigley, M. D., F. A. C. S. Instructor in surgery in the University of Nebraska. Illustrated with 334 engravings. Price \$6. F. A. Davis Co., Publishers, Philadelphia, Pa.

The introduction to this volume is a very interesting historical resume of the various theories held from time to time concerning cancer. So far as can be gleaned from records up to a hundred years ago the author is inclined to affirm a

greater prevalence of cancer today than in past centuries but he is hopeful, since never before has our knowledge been so full, considering that in former times only the terminal stages were known. At present, through the assistance of modern science, physicians are in possession of the facts leading up to the development of the disease. The work is divided into four sections as follows: Section I, Sixteen Chapters on Cancer Causation and Prophylaxis; Section II, Eleven Chapters on Treatment; Section III, Summary of What We Know Concerning Cancer; and Section IV, Disease Conditions Other Than Cancer in Radium is of Value. This well written monograph is of especial value to those prepared to treat malignant conditions with radium but it will also be found valuable as a compendium of our present day knowledge of cancer and methods of prevention and attack.

GYNECOLOGY—A TEXT-BOOK OF THE DISEASES OF WOMEN—Lynn Lyle Fulkerson, A. B., M. D., F. A. C. C., Instructor in Obstetrics and Gynecology, New York Post-Graduate Medical School; Surgeon, Cornell University Medical School Clinic; Associate Gynecologist Lutheran Hospital of Manhattan; Assistant Gynecologist New York Post-Graduate Hospital. With 612 illustrations, three in color. P. Blackiston's Son & Co., 1012 Walnut street, Philadelphia.

The author states that the object of this work is the presentation of the essentials of medical and surgical gynecology in a simple, clear, concise yet comprehensive manner, as it is taught and practiced by the active leaders in its special field. He compliments several surgeons for their time-saving operative technic, emphasizing the use of the knife instead of the scissors, and a continuous suture rather than an interrupted suture.

The table of contents shows the book to be divided into thirty-eight chapters. There are single but very short chapters devoted to discussions of "Diseases of the Urinary Tract," "Diseases of the Anus and Rectum," and "Backache," "Gonorrhea," "Syphilis," "Tuberculosis," "Protein Therapy," and "The Sedimentation Test." One questions the value and wisdom of writing so briefly upon some of these subjects.

The first 75 pages of the text are devoted to "Anatomy and Developmental Anomalies." This material is well selected and the descriptions are clear and direct, and are based upon a dozen bibliographical text-book references.

In the division entitled "Physiology" there is a discussion of endocrine glands, menstruation, ovulation and menstrual abnormalities.

The chapter on "History Taking and Examination" is very commendable, offering the student in short form and by clear statements a very practical form and method of history recording with the gynecological examination.

The chapter upon "General Operative Technic" is an unusually well-written outline setting forth principles of greatest fundamental importance. This chapter should be read and re-read by students of medicine and particularly those beginning surgical practice, and the first one-half dozen paragraphs should be ever in minds of those who are operating.

Chapters XXX to XXXIV are indicative of the author's ability in surgical technic and the use of clear, concise directions in surgical procedures.

One might go through the entire book following the descriptions of technical surgical procedures and make the same favorable comment.

Throughout the book one finds the descriptions upon etiology and pathology altogether too brief.

James E. Davis.

MEDIUM SIZED TYPE MOST EASILY READ

Large sized type does not save the reader's time. On the contrary it is read more slowly by adults than is type of a medium size. This strange conclusion was reached by two professors as a result of a test given by them to 320 sophomores at the University of Minnesota. The test material consisted of paragraphs of equal reading difficulty printed in 6 point, 8 point, 10 point, 12 point and 14 point type. The students' speed of reading was determined for each different size of type, and it was found that the material in 10 point type was read more quickly than either the smaller or the larger type. The difference in number of words read per minute was quite large, especially for the extreme sizes of type. The number of words per minute from 10 point was 6.2 per cent greater than from 6 point, 5.2 per cent greater than from 8 point, 5.8 per cent greater than from 12 point, and 6.9 per cent greater than from the 14 point. The 10 point type is the size commonly used in well-printed books.—Science Service.

The contributed articles and editorial in this Journal are printed in 10 point. The Science Service, abstracts of papers from the Journal of the A. M. A. and others are printed in 8 point type and foot notes in 6 point.

AN UNREASONABLE TAX

(New England Journal of Medicine)

One of the most unreasonable increases in the tariff is that which increases from 45 per cent to 70 per cent the tariff on surgical instruments.

It may be that the proponents of the bill believe that surgeons are so prosperous that they can afford to meet this added cost. * * * A considerable proportion of steel surgical instruments are not made in this country and the tariff on these does not protect local manufacturers to any great extent. The steel instrument industry is a highly specialized occupation requiring expert workmen and expensive mechanical equipment and the products are turned out at lower cost in European countries than is possible in the United States. * * * If members of congress were aiming at the medical profession there is still no apparent reason for this increase for doctors pay the established rate on income and in addition special taxes. There seems to be little recognition of the great amount of unpaid service rendered by the members of the medical profession to the people at large, which might warrant some consideration in matters of taxation or tariff.

THE LABORER AND HIS HIRE

(Journal Indiana Medical Association)

No physician should work on a salary for any considerable length of time, as he gets into a rut and gradually becomes obsessed with the fear that if he goes out independently he will not earn a living. Salary is all right at the start, but some other arrangement whereby the physician goes on his own or shares in the return for his labor should be made early in a young physician's career.